

Chapter 8

Geography, Race and Nation: Remapping “Tropical” Australia, 1890–1930

WARWICK ANDERSON

In March 1885, the government Resident of the Northern Territory of Australia issued a report on the problem of tropical development. “To the ordinary English emigrant”, wrote J Langdon Parsons, “the bare mention of ‘the tropics’ is sufficient to create a scare, and conjure up visions of pasty-faced children, delicate women, and men with bad livers”.¹ But in 1925, Sir James Barrett, a leading figure in the medical school of the University of Melbourne, could declare: “The deliberate opinion of the vast majority of medical men and physiologists is, that so far as climate is concerned, there is nothing whatever to prevent the peopling of tropical Australia with a healthy and vigorous white race.”² It is between these two quotations, between the voice of the administrator and the voice of the medical expert, between environmental determinism and cultural autonomy, between colonial pessimism and national optimism, that I would like to frame this essay.

What had happened to ideas of man and ideas of nature in northern Australia during this period? Throughout the nineteenth century medical geographies of northern Australia had reiterated that the tropics were no place for permanent European settlement. And yet, with the federation of the colonies in 1901, Australia was committed politically to the exclusion of non-Europeans and to the forced repatriation of the Pacific Islanders who had been compelled to labour in tropical

Warwick Anderson, Centre for the Study of Health and Society and History and Philosophy of Science Department, University of Melbourne, Parkville 3052, Australia.

An earlier version of this paper appeared in *Historical Records of Australian Science*. I am grateful to Martin Gibbs and Matthew Klugman for research assistance. I would like also to thank Hugh Anderson, Conevery Bolton Valenčius, Rod Home, Jan Sapp, Richard Gillespie, Nicolaas Rupke and Charles Rosenberg for advice and guidance. Versions of this paper were presented in the History and Philosophy of Science Department, University of Melbourne, and at the Institut für Geschichte der Medizin, Georg-August Universität, Göttingen.

¹ J Langdon Parsons, ‘Quarterly Report on the Northern Territory, March 31, 1885’, *South Australian Parliamentary Papers*, 1885, no. 54: 7. William J Sowden, in *The Northern Territory As It Is: A Narrative of the South Australian Parliamentary Party’s Trip* (Adelaide, W K Thomas, 1882), confirms Parsons’s fears. He reports that “with regard to the effect of the climate upon labour, there seems to be a consensus of opinion that Europeans cannot do the hewing and the drawing. That must be undertaken by coloured folk”, pp. 146–7.

² Sir James Barrett, ‘Can Tropical Australia be Peopled by a White Race?’, *The Margin*, 1925, 1: 28–35, p. 30.

Remapping “Tropical” Australia, 1890–1930

canefields. How then to develop the north? As medical scientists in the new nation increasingly emphasized the actual plasticity of the tropics as a pathogenic site, we find the elaboration of a discourse of tropical development—a new frontier—that proposed the settling there, under medical supervision, of a “working white race”. During this period, medicos had become ever less inclined to relate disease and degeneration to climate and physical surroundings, preferring to attribute these conditions to the minute organisms that researchers at the Australian Institute of Tropical Medicine, established in 1913, located especially in insects and non-European races. A medical remapping of tropical Australia occurred, one that traced an anthropomorphic mobilization of pathology—it was a remapping that, in effect, erased pathology from the landscape. (It was the case record, more than the map, that now interested bacteriologists.) Scientists like Barrett trumpeted the inevitable conclusions of their laboratory and field investigations at the 1920 Australasian Medical Congress: a working white race could flourish in the north, despite the uncomfortable climate, but only so long as the apparently “natural” carriers of dangerous tropical pathogens—those races that had evolved with supposedly tropical disease organisms—were rigorously excluded from the geographically whitened nation.³

Such a brief introduction necessarily over-simplifies the politics of geographical, medical and ethnographic research in colonial and proto-national Australia. In this essay I will try to provide a more circumstantial and complex account, but there are a few broad themes I should sketch at the outset. First, a static, diminished, and increasingly dated medical geography could, in the early twentieth century, be represented as a removable impediment to racial expansion and progress, one that further investment in modern laboratory research would certainly overcome. Deprecation of the old succubus of environmental pathogenesis thus became a means of securing support for laboratory science. Second, it can be said that during this period biological and medical scientists sought a dominion over tropical nature. Gradually, the tropical environment was reconfigured from a place inimical to civilization, to a place that a relatively autonomous white civilization could modernize and exploit. Climate and vegetation had been reduced, disarmed, and exonerated; “nature” appeared ever less determinate and implacable. Instead, local and foreign race cultures were identified as the chief threat to white corporeal security, although their menace, too, when not actively excluded seemed ever more reformable—that is, available to modernization. In the laboratories and in the field, “tropical nature”

³ On the development of the new speciality of tropical medicine in Australia, see R A Douglas, ‘Dr Anton Breinl and the Australian Institute of Tropical Medicine’, *Medical Journal of Australia*, 1977, i: 713–16; 748–51; 784–90; Lorraine Harloe, ‘Anton Breinl and the Institute of Tropical Medicine’, in Roy MacLeod and Donald Denoon (eds), *Health and Healing in Tropical Australia and Papua New Guinea*, Townsville, James Cook University Press, 1991, pp. 35–46; and Douglas Gordon, *Mad Dogs and Englishmen Went out in the Queensland Sun: Health Aspects of the Settlement of Tropical Queensland*, Brisbane, Amphion Press, 1990. More generally, see Michael Worboys, ‘The Emergence of Tropical Medicine: A Study in the Establishment of a Scientific Specialty’, in G Lemaire et al. (eds), *Perspectives on the Emergence of Scientific Disciplines*, The Hague, Mouton, 1976, pp. 75–98.

and “tropical culture” were thus reframed as separable and then brought into modernity together.⁴

In trying to locate the point at which medicine becomes less an environmental discourse and more a vocabulary for modern citizenship, I am drawing together a number of historical studies that previously were distinct. In particular, I want to connect the history of medical geography and the history of biomedical sciences with our knowledge of Australian race and settlement policy.⁵ Early accounts of Australian racialism emphasized the efforts of organized white labour to exclude, for economic reasons, Asians and Pacific Islanders who could not, it seemed, be unionized.⁶ More recently, some historians have argued that the white Australia policy merely codified the underlying racism of all sections of Australian society.⁷ But if the labour movement’s rationalization of the policy was economic, how did the middle-class explain their support for this national goal? A few scholars have pointed to a liberal political justification for the exclusion of races deemed impossible to enfranchise.⁸ Yet the scientific argument for racist policy, with its capacity to appeal to all groups in Australian society in the early twentieth century, has been

⁴ Warwick Anderson, ‘The Natures of Culture: Environment and Race in the Colonial Tropics’, presented at a conference on ‘Environmental Discourses in South Asia and Southeast Asia’, Social Science Research Council, USA, Hilo, Hawaii, December 1995. In a sense I am describing the end of the medical discourse on settlement analysed by Conevery Bolton Valencius, ‘The Geography of Health and the Making of the American West: Arkansas and Missouri 1800–1860’, Chapter 7 in this volume.

⁵ On the history of medical geography, see Mirko Grmek, ‘Géographie médicale et histoire des civilisations’, *Annales: Economies, Sociétés, Civilisations*, 1963, 18: 1071–87; and Philip D Curtin, ‘The Promise and the Terror of a Tropical Environment’, in idem, *The Image of Africa: British Ideas in Action, 1780–1850*, Madison, University of Wisconsin Press, 1964. For Australia, see J M Powell, ‘Medical Promotion and the Consumptive Immigrant to Australia’, *Geographical Review*, 1973, 63: 449–76; and Helen R Woolcock, ‘“Our salubrious climate”’: attitudes to health in colonial Queensland’, in Roy MacLeod and Milton Lewis (eds), *Disease, Medicine and Empire: Perspectives on Western Medicine and the Experience of European Expansion*, London and New York, Routledge, 1988, pp. 176–93. For brief accounts of literature on climate and character in Australia, see Chris Tiffin, ‘Imagining Countries, Imagining People: Climate and the Australian Type’, *Span*, 1987, 24: 46–62; and Jon Stratton, ‘Deconstructing the Territory’, *Cultural Studies*, 1989, 3: 38–57. On the development of biomedical science in Australia, see F C Courtice, ‘Research in the Medical Sciences: the Road to National Independence’, in R W Home (ed.), *Australian Science in the Making*, Cambridge, Cambridge University Press, 1988, pp. 277–307.

⁶ Myra Willard, *The History of the White Australia Policy to 1920*, Melbourne, Melbourne University Press, 1923; N B Nairn, ‘A Survey of the White Australia Policy in the Nineteenth Century’, *Australian Quarterly*, 1956, 28: 16–31; and A C Palfreeman, *The Administration of the White Australia Policy*, Melbourne, Melbourne University Press, 1967.

⁷ Humphrey McQueen, *A New Britannia: An Argument Concerning the Social Origins of Australian Radicalism and Nationalism*, Ringwood, Penguin, 1970; Kay Saunders, ‘The Black Scourge: Racial Responses toward Melanesians in colonial Queensland’, in Raymond Evans et al. (eds), *Race Relations in Colonial Queensland: A History of Exclusion, Exploitation and Extermination*, St Lucia, University of Queensland Press, 1988 [1975], pp. 147–234; Verity Burgmann, ‘Capital and Labour: Responses to Immigration in the Nineteenth Century’, in Ann Curthoys and Andrew Markus (eds), *Who are our Enemies? Racism and the Australian Working Class*, Sydney, Hale and Iremonger, 1978, pp. 20–34; and Ann Curthoys, ‘Racism and Class in the Nineteenth-Century Immigration Debate’, in Andrew Markus and M C Ricklefs (eds), *Surrender Australia? Essays in the Study and Uses of History*, Sydney, Allen and Unwin, 1985.

⁸ For example, J A La Nauze, *Alfred Deakin: A Biography*, 2 vols, Melbourne, Melbourne University Press, 1965.

relatively neglected.⁹ This essay, then, is a novel exploration of a local medical effort to produce, and re-produce, flexible and plausible typologies of race and environment in order to shape public policy.¹⁰ In this project we see the ending of medical geography and the beginning of medical government; we find that the citizen, as much as the continent, has become scientifically legible.

Distribution of Disease

I am, in a sense, describing the interaction of advocates of two rather different organizing principles for the distribution of disease. An older generation of medical doctors, along with a younger group of anthropologists and geographers, retained a more static model of the spatial distribution of disease, based on physical cause and (more importantly) on physiological effect. Their medical geography, built around assumptions of racial and constitutional predisposition, sought primarily to explain endemicity of disease. In other words, disease was located securely in a specific environment, and humans—whether through evolutionary processes, God's beneficence, or temperate behaviour—were either accustomed to it or not. But in a settler society, such as Australia, migration had stimulated medical interest in the process of becoming racially adjusted to a foreign disease environment: the process called seasoning, or acclimatization. In this conventional medical geography, race and environment were everywhere inseparable as an etiological complex. But a younger generation of medical doctors, often committed to laboratory research and afire with enthusiasm for the new bacteriology and parasitology, was developing during this period a more ontologically independent model for the spatial distribution of disease. It is, in part, the difference between a clinical orientation and a more reductionist logic of laboratory research. The new votaries of the medical laboratory sought to trace the mobilization of disease organisms, the dynamics of biological cause, across a landscape, as much as to identify clinical effect within a landscape. And when disease becomes mobile in this way, it is much easier, as we shall see, for humans to stay put.¹¹

⁹ But see Raymond Evans, 'Keep White the Strain: Race Relations in a Colonial Setting', in Evans et al. (eds), *op. cit.*, note 7 above, pp. 1–24; and Michael Roe, 'The Establishment of the Australian Department of Health: Its Background and Significance', *Historical Studies (Australia)*, 1976, 67: 176–92.

¹⁰ On metropolitan race science during this period, see Nancy Stepan, *The Idea of Race in Science: Great Britain, 1800–1960*, Hamden, CT, Archon Press, 1982; and George M Fredrickson, *The Black Image in the White Mind: The Debate on Afro-American Character and Destiny 1817–1914*, Middletown, CT, Wesleyan University Press, 1987. For other studies of the local generation of colonial race theory, see C L Bacci, 'The Nature-Nurture Debate in Australia 1900–1914', *Australian Historical Studies*, 1980, 75: 199–212; and David Johnson, 'Aspects of a Liberal Education: late 19th Century Attitudes to Race, from Cambridge to the Cape Colony', *History Workshop Journal*, 1992, 36: 162–82. For a preliminary account of the connections of medicine, race, and settlement policy in the tropical colonial world during this period, see Warwick Anderson, 'Disease, Race, and Empire', *Bulletin of the History of Medicine*, 1996, 70: 62–7. On the need for such comparative studies, see Donald Denoon, *Settler Capitalism: The Dynamics of Dependent Development in the Southern Hemisphere*, Oxford, Clarendon Press, 1983.

¹¹ Warwick Anderson, 'Immunities of Empire: Race, Disease, and the New Tropical Medicine', *Bulletin of the History of Medicine*, 1996, 70: 94–118. On acclimatization, see David N Livingstone, 'Human Acclimatization: Perspectives in a Contested Field of Inquiry in Science, Medicine and Geography', *History of Science*, 1987, 25: 359–94; and Dane Kennedy 'The Perils of the Midday Sun: Climatic Anxieties in the Colonial Tropics', in John M MacKenzie (ed.), *Imperialism and the Natural World*, Manchester, Manchester University Press, 1990, pp. 118–40.

Attempts to settle whites in the north had been made since the late 1830s, first at Port Essington and later at Darwin, but despite a brief mining boom and the construction of an overland telegraph, the rest of the Northern Territory, then attached to the colony of South Australia, failed to attract many white settlers. When it was transferred to the federal government in 1911, the territory contained only 2,846 non-Aboriginal inhabitants, and of these 1,182 were Europeans.¹² Settlement along the humid north Queensland coast had begun later, but swelled by a gold rush, it was more successful than in the territory. Although opened up primarily for pastoral purposes, the country was soon turned over to sugar cane plantations.¹³ From the 1860s, the planters imported almost 65,000 Melanesian labourers, called Kanakas, from nearby Pacific islands, usually the Solomons and New Hebrides. Toward the end of the century almost one-third of the coastal population was from the Pacific islands.¹⁴ (By this time most of the Aboriginal population was dead, imprisoned, driven inland, or clustered in a few shanty towns—it was presumed that racial competition would inevitably render the race extinct.) Independent producers indentured the Pacific Islanders, deemed cheap and reliable labourers, on small, relatively inefficient plantations. Social dislocation, inadequate housing, and medical neglect meant that the Islanders, supposedly adapted to the exigencies of a tropical climate, had a death rate four times higher than that of Europeans in the north.¹⁵ And yet, even this great disparity was not sufficient to shake the prevailing assumption that they were racially immune to tropical disease.

The notion that tropical races were relatively resistant to the diseases of their ancestral realm lasted, as we shall see, just so long as tropical races were required to labour on the northern plantations. The sugar industry was reconstructed in the 1890s: the costs of recruiting Islander labour had risen in the previous decade with the depopulation of nearby islands; the Islanders whose contracts had expired began demanding higher wages; and the international sugar market collapsed in the late 1880s.¹⁶ As a result, the industry shifted from labour-intensive plantation agriculture to a capital-intensive central milling arrangement. The Queensland government encouraged white agricultural workers to take up land to supply the mills. “The

¹² Gordon Reid, *A Picnic with the Natives: Aboriginal-European Relations in the Northern Territory to 1910*, Melbourne, Melbourne University Press, 1990.

¹³ On Queensland history, see Raphael Cilento and Clem Lack, *Triumph in the Tropics: An Historical Sketch of Queensland*, Brisbane, Smith and Paterson, 1959; and Geoffrey C Bolton, *A Thousand Miles Away: A History of North Queensland to 1920*, Canberra, Australian National University Press, 1963. See also idem, *Spoils and Spoilers: Australians Make Their Environment, 1788–1980*, Sydney, Allen and Unwin, 1981.

¹⁴ On the history of the labour trade, see Peter Corris, *Passage, Port and Plantation: A History of the Solomon Islands Labour Migration, 1870–1914*, Melbourne, Melbourne University Press, 1973; Kay Saunders, *Workers in Bondage: The Origins of Unfree Labour in Queensland, 1824–1916*, St Lucia, University of Queensland Press, 1982; and Ralph Schlomowitz, ‘Epidemiology of the Pacific Labor Trade’, *Journal of Interdisciplinary History*, 1989, 19: 585–610. Clive Moore’s *Kanaka: A History of Melanesian Mackay* (Port Moresby, University of Papua New Guinea Press, 1985) emphasizes a continuing Pacific Islander presence. More generally, see Evans et al. (eds), op. cit., note 7 above.

¹⁵ Ross Patrick, *A History of Health and Medicine in Queensland, 1824–1960*, St Lucia, University of Queensland Press, 1987, p. 531.

¹⁶ For more details on the sugar economy, see H T Easterby, *The Queensland Sugar Industry*, Brisbane, F Phillips, 1936.

most highly important economic and social result of this change”, reported Dr Walter Maxwell, the American director of the Sugar Experiment Stations, in 1901, “is found in the circumstance that the ownership and occupancy embrace a large number of strong, responsible, and progressive white settlers, with families of coming men and women, who are being planted over the sugar growing areas”.¹⁷ Pacific Islanders, no longer indentured labourers, soon became part-time farm-workers competing with white farmers who cut their own cane and with white workers drawn to the cane fields after the collapse of the mining and pastoral industries in the 1890s’ depression.

After federation of the colonies in 1901, the new Australian parliament had passed the Pacific Islanders Labourers Act which stipulated that no more indentured labourers would be brought into the northern tropics after 1904, and those already in the country would be deported by 1907, at the end of their agreements. Part of the common aspiration to keep the whole continent for a white race, this legislation would render the sugar industry dependent on white labour.¹⁸ Along with the Immigration Restriction Act of the same year, it comprised the legislative core of the white Australia policy, preserved more or less intact until the 1960s.¹⁹

But elements of the medical profession lagged behind national policy. In late 1900, Dr Joseph Ahearne wrote to the most chauvinist and popular of magazines, the *Bulletin*, warning that “the white race of Queensland is undergoing modification physically, morally and mentally”. In comparison with English boys, the currency lads were more narrow in the chest and two inches taller than they ought to be. Furthermore, “the tropical resident of some years standing possesses less endurance than his fellow workman imported from a more bracing locality”—this was because “an intelligent God equipped Man so that he should be suitable to his environments”.²⁰

¹⁷ Walter Maxwell, ‘Report on the Cane Sugar Industry of Australia’, *Votes & Proceedings, Queensland Parliamentary Papers*, 1901, pp. 275–90, p. 275.

¹⁸ Alan Birch, ‘The Implementation of the White Australia Policy in the Queensland Sugar Industry, 1901–12’, *Australian Journal of Politics and History*, 1965, 11: 198–210; and Peter Corris, ‘White Australia in Action: The Repatriation of the Pacific Islanders from Queensland’, *Historical Studies* (Australia), 1972, 15: 170–5. For explanations that emphasize economics over ideology, see Adrian Graves, ‘The Abolition of the Queensland Labour Trade: Politics or Profits?’, in E L Wheelwright and Ken Buckley (eds), *Essays in the Political Economy of Australian Capitalism*, vol. 4, Sydney, Australia and New Zealand Book Co., 1980, pp. 41–57; and idem, ‘Crisis and Change in the Queensland Sugar Industry, 1863–1906’, in Bill Albert and Adrian Graves (eds), *Crisis and Change in the International Sugar Economy, 1860–1914*, Norwich and Edinburgh, ICS Press, 1984, pp. 261–80.

¹⁹ Sean Brawley, *The White Peril: Foreign Relations and Asian Immigration to Australasia and North America 1918–78*, Sydney, University of New South Wales Press, 1995; Burgmann, op. cit., note 7 above; and Curthoys, op. cit., note 7 above.

²⁰ J Ahearne, ‘The Australian in the Tropics’, Red Page, *Bulletin* (29 September 1900). Ahearne was merely echoing a medical convention of the late nineteenth century. In 1893, Dr E A Birch had asserted that “under the circumstances of ordinary life, a tropical climate (of which India is a type) is inimical to the European constitution”. He could cite expert opinion that European children in such a depleting climate grow up “slight, weedy, and delicate, over-precocious” (Birch, ‘Influence of warm climates on the constitution’, in Andrew Davidson (ed.), *Hygiene and Diseases of Warm Climates*, Edinburgh and London, Young J Pentland, 1893, pp. 1–24, on pp. 4 and 5). The reform Darwinist, Benjamin Kidd, was perhaps the most pessimistic of foreign commentators, and the most widely cited in Australia. “The attempt to acclimatize the white man in the tropics”, he advised, “must be recognized as a blunder of the first magnitude. All experiments based on the idea are mere idle and empty enterprises doomed to failure” (*Control of the Tropics*, London, Macmillan, 1898, p. 48).

A G Stephens, the literary editor of the *Bulletin*, had felt that the article warranted publication on the grounds that the “appeal differed from the appeals of other colored labour apologists in that it assumed a scientific foundation. But it has been shown that Dr Ahearne’s foundation is no foundation in as much as his data are insufficient to yield a conclusion”. Indeed, was not Ahearne a “Townsville medico in healthy condition with a spouting kidney and not too enlarged a liver who . . . shows none of the signs of race deterioration which he attributes to other North Queenslanders”.²¹ Mitty from Mackay wrote in, after “a hard day’s work in the canefield”, to point out that the white man was more than equal to the Kanaka when it came to tropical labour.²² And S J Richards, the government medical officer at Mt Morgan, found the children there a little darker in skin colour but no less robust than their cousins down south: “So welcome Federation and a White Australia.”²³

And yet, as late as 1915, in the *Medical Journal of Australia*, we find M.B. drawing the readers’ attention to an article by Leonard Hill, the professor of physiology at the London Hospital, that had appeared the year before in the *British Medical Journal*. “Evolution”, according to Hill, “had settled the dark-skinned man in the tropics and the white in the temperate zones of the earth”. The white man’s body heat regulating mechanism was less efficient in the tropics, requiring more energy of the heart and disinclining him for muscular work. Therefore he “can be the organizer and the overlooker, and the handicraftsman working in fan-cooled buildings protected from the sun, but he can only live at the expense of the dark-skinned races whose field labor is exploited by him”.²⁴ Hill’s conclusions had inspired M.B. to suggest that the “White Australia policy is poor business, bad science, and worse morals . . . the laborers in the field must have the protection of pigment”. He warned that the “votaries of a White Australia claim that the white man has only gradually to acclimatize. To acclimatize is either to pigment or to enervate or both”.²⁵ But James Merrillees of Roma, Queensland, was critical of Hill’s “pious opinions”. “I am open to learn of one case, scientifically asserted, where a white-skinned man acquired pigmentation and transmitted it to his offspring as a fixed character”. The curse of hot climates occupied only by whites was alcohol; where there was a mixture of races, “the dangers are alcohol and syphilis”.²⁶

Cosmos continued the sparring in the *Medical Journal of Australia*, claiming that the “so-called science of our universities is too limited to deal adequately with the policy of a White Australia”. Whatever the new laboratory experts might argue, “man—black or white—is in tune with the universe when he is in that environment which called forth his characteristics. Abundant evidence exists that the people of

²¹ A G Stephens, ‘The Australian in the Tropics’, Red Page, *Bulletin* (13 October 1900).

²² Mitty from Mackay, ‘The Australian in the Tropics’, Red Page, *Bulletin* (24 November 1900).

²³ S J Richards, ‘The Australian in the Tropics’, Red Page, *Bulletin* (29 December 1900).

²⁴ Leonard Hill, ‘The Working Power of the White Man in the Tropics and the Electric Fan’, *British Medical Journal*, 1914, i: 325.

²⁵ M.B., ‘Correspondence—White Australia Policy’, *Medical Journal of Australia*, 1915, i: 277–8, p. 277.

²⁶ James F Merrillees, ‘Correspondence—White Australia Policy’, *Medical Journal of Australia*, 1915, i: 345–6, p. 345.

the northern parts of Australia are colored".²⁷ But in response to these assertions, Richard Berry, the professor of anatomy at Melbourne University (and later a prominent British eugenicist), wrote that "the 'White Australia Policy' is not a policy at all, but is in reality a medical problem of the first magnitude". As such it had not yet been subject to a proper test. In Professor Berry's opinion, though, given suitable railway facilities, housing on "physiological lines", rational hours of work, proper diet, individual observation of the laws of hygiene, and elimination of the vectors of specific diseases, there was no scientific reason why the Australian tropics could not be settled by white labour that would remain "white and healthy".²⁸ In Berry's opinion, the torrid zone was no longer an inherently pathological site for the white race.

That a number of young geographers, anthropologists and historians also came to contribute to this medical debate indicates the still rather inchoate character of disciplinary boundaries during this period.²⁹ Prominent among these contributions, the work of the geographer Ellsworth Huntington marks perhaps the high tide of climatic determinism as applied to medicine. In 1915, he proposed a "climatic hypothesis of civilization" as the basis for the "new science of geography".³⁰ From his analysis of the records of hundreds of white United States males, Huntington, a professor of geography at Yale, found that "mental activity reaches a maximum when the outside temperature averages 38 degrees [F], that is, when there are mild frosts at night" (p. 8). From this data he drew a map showing how human energy was distributed throughout the world. It was, in effect, a physiological projection of the white male body onto whole of the globe. The tropics were redefined as an "unstimulating environment" (p. 38) where it would be impossible to sustain "European and American energy, initiative, persistence, and other qualities upon which we so much pride ourselves" (p. 41). Not surprisingly, Huntington found that the level of white energy in northern Australia was generally dismally low, causing him to express his reservations about white settlement there. "Man", according to Huntington, was "much more closely dependent upon nature than he has realized"

²⁷ Cosmos, 'Correspondence—White Australia Policy', *Medical Journal of Australia*, 1915, ii: 43–4, p. 43.

²⁸ R J A Berry, 'Correspondence—White Australia Policy', *Medical Journal of Australia*, 1915, ii: 93.

²⁹ I plan to discuss elsewhere the congruence of the older style of medical reasoning with an evolutionary anthropology that was emerging in Australia during this period. The contribution of historians to this discourse on race and environment also deserves investigation, but not here. It is worth noting, though, that the liberal historian and politician Charles H Pearson had written his influential *National Life and Character: A Forecast* (London, Macmillan, 1893) while at Melbourne University. In this book he predicted that "the black and yellow belt, which always encircles the globe between the Tropics, will extend its area, and deepen its color with time". Pearson's work influenced Theodore Roosevelt, William Gladstone, and Houston Stewart Chamberlain. During the parliamentary debate on the Immigration Restriction Bill, Edmund Barton, the first Prime Minister, quoted two passages from Pearson's book to justify efforts to hold back coloured races. Alfred Deakin, Australia's second Prime Minister, later praised Pearson for first warning of the "Yellow Peril to Caucasian civilization, creeds, and politics" (quoted in J M Tregenza, *Professor of Democracy*, Melbourne, Melbourne University Press, 1968, p. 234).

³⁰ Ellsworth Huntington, *Civilization and Climate*, New Haven, Yale University Press, 1915, p. v. For Huntington's defence of his Australian predictions, see 'Natural selection and climate in northern Australia', *Economic Record*, 1929, 5: 185–201; and in response, C H Wickens, 'Dr Huntington and low latitudes', *Economic Record*, 1930, 6: 123–7; and R W Cilento, 'Rejoinder to Professor Huntington', *Economic Record*, 1930, 6: 127–32. (Wickens was the Commonwealth statistician.)

(p. 298). Inspired by Huntington's work, Griffith Taylor, then at Sydney University and later professor of geography at Toronto, constructed a "white race climograph" to delimit the physiological tropics in northern Australia.³¹

But it would be wrong to assume that all geographers were environmental determinists. For example, J W Gregory, the professor of geology at Melbourne (and later at Glasgow), had learnt much from his colleagues in the Melbourne medical faculty. When he was appointed in 1900 he was already well-known for his book that had demonstrated a great rift valley through east Africa. His exploratory zeal led him to spend as much time off the beaten track as in the classroom, and from one of these excursions had come his influential book *The Dead Heart of Australia*. As a result of his study of Australian conditions, he predicted that the whole of the country would eventually be occupied by a healthy white race. In 1910, from Glasgow, he wrote that even in tropical Queensland the white children were "not weak anaemic degenerates, while the increased output of sugar since the deportation of the Kanakas shows that white men are willing and able to work there".³² This achievement had required isolation from inferior tropical races. Later, in his book *The Menace of Colour*, Gregory would expatiate on the dangers to health not from a foreign environment but from contact with disease-dealing coloured races.³³

But to a large extent, all these environmental arguments—whether advocated by doctors or geographers—hinged on the definition of "tropical". Just as a racial typology was difficult to define out of a mass of individual peculiarities, so too were the simplifications necessary in the classification of an environment controversial. Books of adventure and travel described the northern coast as a place of impenetrable jungle, mangrove swamps, and unrelenting heat.³⁴ Others pointed to a cartographic demarcation. Thus Frederick Goldsmith at the 1902 Australasian Medical Congress had observed that "taking the tropic of Capricorn as the dividing line, more than one third of the continent of Australia lies within the tropics".³⁵ But this definition did not coincide with isothermal charts, so other medical doctors suggested that the

³¹ Thomas Griffith Taylor, *The Control of Settlement by Humidity and Temperatures*, Melbourne, Commonwealth Bureau of Meteorology, 1916; idem, 'Geographical factors concerning the settlement of tropical Australia', *Proceedings of the Royal Geographical Society of Queensland*, 1917, 32/33: 1–64; and idem, 'The Distribution of Future White Settlement: A World Survey based on Physiographic Data', *Geographical Review*, 1922, 12: 375–402. On Taylor, see J M Powell, 'National Identity and the Gifted Immigrant: A Note on T. Griffith Taylor, 1880–1963', *Journal of Intercultural Studies*, 1981, 2: 43–54; and idem, 'Protracted reconciliation: society and the environment', in Roy MacLeod (ed.), *The Commonwealth of Science: ANZAAS and the Scientific Enterprise in Australasia, 1888–1988*, Melbourne, Oxford University Press, 1988, pp. 249–71.

³² J W Gregory, 'White Labor in Tropical Agriculture: A great Australian Experiment', *The Nineteenth Century*, 1910, 67: 368–80, p. 379. On Gregory, see David Branagan and Blaine Lim, 'J.W. Gregory, traveller in the dead heart', *Historical Records of Australian Science*, 1984, 6: 71–84.

³³ J W Gregory, *The Menace of Colour*, London, Seeley Service, 1925.

³⁴ See, for example, Alfred Searcy, *In Australian Tropics*, London, Kegan Paul Trench Trubner, 1907. Searcy, a collector of customs at Darwin, did not believe that "white men should actively engage in the cultivation of tropical products on the coast, or rivers, or swamps", for he was "of the opinion that that can only be carried out by coloured labour", p. 366.

³⁵ F Goldsmith, 'The Necessity for the Study of Tropical Medicine in Australia', *Transactions of the Intercolonial Medical Congress of Australasia*, 6th session, 1902, Hobart, John Vail, 1903, pp. 178–9, on p. 178. See also G H Frodsham, *A Bishop's Pleasaunce*, London, Smith Elder, 1915, p. 238.

Remapping “Tropical” Australia, 1890–1930

tropical zone should be limited to the region between the two mean isotherms of 68 degrees Fahrenheit, a temperature that permitted palms to flourish.³⁶ Such meteorological mapping still presented difficulties. One geographer pointed out that “the sustained high tropical temperatures of our northern areas is not that of the dangerous intensity created by the more humid conditions of the tropics”.³⁷ So just how “tropical” were the Australian tropics? No one could agree. Sir James Barrett, ever a staunch promoter of white settlement in the north, dismissed this geographical pedantry: “The tropics has generally been associated with a temperature of 75 degrees in winter. The whole of Australia is below 75 degrees in winter; at least two-thirds, if not three-fourths, is below 70 degrees in summer; so the region which can properly be termed ‘tropical’ is comparatively small”.³⁸

For tropical pessimism about the planting of a healthy white race in the north to compel assent it was necessary, first, for the “tropics” to exist, and second, for this type of environment to produce degeneration and disease. The first proposition was uncertain, and the second came to appear increasingly suspect.

Mobilizing Pathology

Tropical pessimists in the early twentieth century generally focused on an environmentally determined lowered white resistance rather than on increased exposure to tropical disease. The foreign environment, they argued, rendered formerly robust whites degenerate and vulnerable to disease organisms; it no longer was thought, even by older medical doctors, actually to give rise to specific disease. But this persisting concern with disposition—while not exactly heretical—was increasingly out of step with a new medical enthusiasm for tracing each exciting cause of tropical disease. Modern medical scientists were less interested in adaptation and adjustment to disease environments, and more concerned with the control of an animated disease fauna, with the reform or circumvention of nature through medicalized culture. Lacking this advanced enthusiasm for tracing patterns of biological agency and transmission, the older doctors, along with most evolutionary anthropologists and geographers, had come to sound decidedly old-fashioned and irrelevant by 1920. A geographical perspective on disease by this time had been reduced to an indefensibly dated concentration on constitutional disposition. As a result, medical pessimism about a white conquest of the tropics seemed ever more spurious.³⁹

If the chief medical concern was now the presence of distinctive tropical disease organisms, then there was not much to worry about. It had been clear for some time that no matter how uncomfortable one felt in northern Australia, no matter

³⁶ Anton Breinl, ‘Influence of Climate, Disease and Surroundings on the White Race living in the Tropics’, *Medical Journal of Australia*, 1915, i: 595–600, p. 595.

³⁷ A Duckworth, ‘Notes on a “White Australia”’, *Journal and Proceedings of the Royal Society of New South Wales*, 1910, 44: 226–51, p. 250.

³⁸ James Barrett in ‘Tropical Australia Discussion’, *Transactions of the Australasian Medical Congress*, 11th session, 1920, Brisbane, A J Cumming, 1921, p. 63.

³⁹ On the development of this critique in contemporary United States tropical medicine and public health, see Warwick Anderson, ‘Colonial Pathologies: American Medicine in the Philippines, 1898–1920’, PhD dissertation, University of Pennsylvania, 1992.

how far beyond Taylor's "white race climograph" one had ventured, there was little risk of meeting a tropical disease organism. This is not to claim that none existed. Joseph Bancroft in Queensland in 1876 had isolated the adult filarial worm; and in the early 1900s, his son Thomas described the development of *filaria* larvae in mosquitoes, and also incriminated *Aedes aegypti* as the vector of dengue.⁴⁰ Between 1900 and 1902 at Port Darwin, Frederick Goldsmith had encountered a few cases of filariasis and dengue; and some of his patients had malaria, dysentery, beriberi, or leprosy. But he admitted that distinctively tropical diseases were still scarce in the north.⁴¹ In a series of disease surveys of Queensland and the Northern Territory in 1910, 1911 and 1915, Dr Anton Breinl confirmed that tropical diseases, with the exception of hookworm, were rare and easily controlled with attention to personal hygiene. Virtually all of the supposed malaria he encountered turned out to be the sort that comes from glass bottles.⁴²

But there remained that old canard: racial degeneration and increased susceptibility to disease. "The most prominent arguments advanced against the colonization of tropical Australia by a white race", observed Dr J S C Elkington in 1905, "have been those of probable ill-health and racial deterioration". Elkington, the son of a Melbourne University history professor, and a bellicose nationalist and Nietzschean, was then Tasmania's chief health officer, though in the 1920s he became the federal director of tropical public health. In his paper, *Tropical Australia: Is it Suitable for a Working White Race?*, published by the federal parliament, Elkington pointed out that tropical disease in Australia was so rare that "its eventual extinction is mainly a question of money". But the effects of an allegedly tropical climate "uncomplicated with malaria, bad diet, and other influences adverse to health and longevity, have never been thoroughly ascertained". Still, Elkington was sure of a few things. "The co-existence of a considerable native population undergoing the natural penalties of their insanitary ways of living will, of course, increase the danger to white residents." In the context of the new white Australia policy, one can see where this is heading. "On the whole", continued Elkington, "the evidence is against the half-caste, and the experience of other countries goes to show that it is advisable to keep the white stock pure, particularly with respect to the black races, and to the less vigorous brown peoples".⁴³

Sir James Barrett, a prolific writer on tropical medicine, empire affairs, immigration, decimalization, neglected children, venereal disease, pure milk, baby clinics, national parks, and a world calendar, in 1910 joined in the academic clamour for more research. "Is there any reason", he asked in the columns of the Melbourne *Argus*, "to think that mere heat will cause physical deterioration? This is the question that

⁴⁰ E Ford, 'The Bancroft Memorial Lecture: The Life and Influence of Joseph Bancroft', *Medical Journal of Australia*, 1961, i: 153–70.

⁴¹ Goldsmith, *op. cit.*, note 35 above.

⁴² For a summary, see Anton Breinl and W J Young, 'Tropical Australia and its Settlement', *Annals of Tropical Medicine and Parasitology*, 1920, 13: 351–412.

⁴³ J S C Elkington, *Tropical Australia: Is it Suitable for a Working White Race?*, Melbourne, Government Printer, 1905. For other accounts which touch on medical aspects of the White Australia policy, see Evans, *op. cit.*, note 9 above; and Michael Roe, 'The Establishment of the Australian Department of Health: Its Background and Significance', *Historical Studies* (Australia), 1976, 67: 176–92.

requires answer by the experimental method. The probabilities are that life in such conditions will be vigorous, active and normal; but the experiment has never been made, or in Australia even tried, or seriously considered".⁴⁴ Barrett, a utopian rationalist if ever there was one, went on to contend that the scientific method should underpin politics and social planning, and the new tropical medicine would explain the past and predict the future of a white Australia. He wrote to the minister for home affairs, Senator J H Keating on the matter. "It was in the interests of science and their own country", he claimed, "that they had asked for an attempt to be made to secure a scientific solution to a problem by no means settled. It had been said that the Anglo-Saxon race could not live in the tropics". (Of course Barrett previously had argued that little if any of Australia was in fact tropical, but clearly the notion that disease and degeneration could derive from a mismatch of race and environment retained some rhetorical force.) In reply, the minister, later the author of *White Australia: Men and Measures in its Making*, noted that the work of Gorgas in the Panama Canal "was an object-lesson to the world that medical science properly applied to existing conditions could convert and transform them so as to make it possible for white people to continue living in places where, without the application of medical science, . . . it would not be possible".⁴⁵

Melbourne medical scientists, desperate for government support for laboratory research, thus were able to use the dispositionist remnants of a medical geography, which they thought was trivial or inconsequential, to establish Australia's first institute for medical research.⁴⁶ The campaign to establish the institute has been described elsewhere.⁴⁷ In 1913, Sir William McGregor, expert in tropical medicine and governor of Queensland, officially opened the Australian Institute of Tropical Medicine (AITM) in Townsville.⁴⁸ The first director, Anton Breinl, an expert in the chemotherapy of trypanosomiasis, had arrived from the Liverpool School of Tropical Medicine a few years before, and he was soon joined by a parasitologist, a bacteriologist, and a biochemist. The institute in 1930 was incorporated into Sydney

⁴⁴ James Barrett, 'White Men for the North. The Problem of Colonization, a Plea for Research Work', *Melbourne Argus*, 17 September, 1910, p. 4. See also Barrett, *The Twin Ideals: An Educated Commonwealth*, 2 vols, London, H K Lewis, 1918. On Barrett, see Michael Roe, *Nine Australian Progressives: Vitalism in Bourgeois Social Thought, 1890–1960*, St Lucia, University of Queensland Press, 1984, chapter 3.

⁴⁵ 'Tropical Australia: Deputation from Congress to the Prime Minister', *Transactions of the Australasian Medical Congress*, 8th session, 1908, 4 vols, Melbourne, J Kemp, 1909, vol. 4, pp. 101 and 103.

⁴⁶ In 1903 the University staff included five fellows of the Royal Society, but they were over-burdened with teaching and had little research equipment. When Richard Berry took up his post in the anatomy department in 1906 he complained that the building "contained literally nothing, not even a skeleton, though later I discovered quite a lot in the cupboard". Like many others, he felt that research "was practically deleted from university work" (quoted in K F Russell, *The Melbourne Medical School, 1862–1962*, Melbourne, Melbourne University Press, 1972, p. 104).

⁴⁷ Lori Harloe, 'White Man in Tropical Australia: Anton Breinl and the Australian Institute of Tropical Medicine', BA (hons) thesis, James Cook University of North Queensland, 1987; Harloe, *op. cit.*, note 3 above; Douglas, *op. cit.*, note 3 above; and Robert Douglas, 'One Day in the Medical Life of Queensland: The Opening of the Australian Institute of Tropical Medicine', in John Pearn (ed.), *Pioneer Medicine in Australia*, Brisbane, Amphion Press, 1988, pp. 135–44.

⁴⁸ William McGregor, 'Some Problems of Tropical Medicine', *Lancet*, 1900, ii: 1055–61. McGregor had previously been governor of Nigeria. See R B Joyce, *Sir William McGregor*, Melbourne, Oxford University Press, 1971.

University as the School of Public Health and Tropical Medicine, now the Australian Institute of Health and Welfare.⁴⁹

“Only careful and detailed research carried on in the populated coastal districts of tropical Australia, where several generations have been reared”, wrote Breinl in 1914, “will indicate whether the great experiment of populating tropical Australia by a white working community, can be accomplished”.⁵⁰ But of course it did not take nearly that long. In 1920, the subject of the Australasian Medical Congress was ‘Tropical Australia’. After reviewing the physiological research of the AITM, the conference declared that “the opinion of the medical practitioners present was overwhelmingly in favor of the suitability of North Queensland for the successful implantation of a working white race”. They found no “inherent or insuperable obstacles” in the way of white occupation, and thought that on microbial grounds, “the absence of semi-civilized colored peoples in northern Australia simplifies the problem very greatly”.⁵¹ In an address to the Congress, W A Osborne, the professor of physiology at Melbourne, author of *Science and National Efficiency* and of *The Laboratory and Other Poems*, biographer of the bushranger Captain Moonlight and master of the art of boomerang throwing, confirmed that “one particular advantage is the absence of a large native population, for such always acts as a reservoir of infection from which epidemics spill over into the surrounding white population”. Accordingly, “the white Australia policy may become more difficult, but it will become more desirable”. Within this continental citadel, “may we look to improved conditions and eugenic safeguards rejuvenating the white races and starting a new epoch in their progress”.⁵²

Thus tropical settlement and development was, the Congress declared, “fundamentally a question of applied public health in the modern sense”.⁵³ Dr J H L Cumpston, the first director of the federal Department of Health and among those progressives “who dream of leading this young nation of ours into a paradise of

⁴⁹ Douglas, op. cit., note 3 above; and Lori Harloe, ‘From North to South: The Translocation of the Australian Institute of Tropical Medicine’, in Pearn (ed.), op. cit., note 47 above, pp. 145–58.

⁵⁰ Anton Breinl, ‘The Influence of Climate, Diseases and Surroundings on the White Race living in the Tropics’, in J W Springthorpe (ed.), *Therapeutics, Dietetics and Hygiene*, 2 vols, Melbourne, James Little, 1914, vol. 2, p. 996. Elsewhere in his remarkable textbook—which mixes the latest physiology with the race theories of Charles Pearson and Houston Stewart Chamberlain—Springthorpe, a lecturer in the Melbourne Medical Faculty, implied that results were already available: “Contrary to previous beliefs”, he reported, “the acclimated non-alcoholic European can maintain mental and bodily activity without any inhibitory influence”, vol. 1, p. 214.

⁵¹ ‘Tropical Australia Discussion’, *Transactions of the Australasian Medical Congress*, 11th session, 1920, Brisbane, A J Cumming, 1921, pp. 39–69, p. 45. See also A Grenfell Price, *White Settlers in the Tropics*, New York, American Geographical Society, 1939; R W Cilento, *The White Man in the Tropics with Especial Reference to Australia and its Dependencies*, Melbourne, H J Green, Government Printer, 1925, and idem, ‘The Conquest of Climate’, *Medical Journal of Australia*, 1933, i: 421–32. (Cilento was a later director of the AITM.) The physiological research of the AITM generally replicated the work of the American Bureau of Science in the Philippines: see Warwick Anderson, “‘Where every prospect pleases and only man is vile’: Laboratory Medicine as Colonial Discourse”, in Vicente L Rafael (ed.), *Discrepant Histories: Translocal Essays on Filipino Cultures*, Philadelphia, Temple University Press, 1995, pp. 83–112.

⁵² W A Osborne, ‘Physiological Factors in the Development of an Australian Race’, *Transactions of the Australasian Medical Congress*, 11th session, 1920, Brisbane, A J Cumming, 1921, pp. 71–82, on pp. 76 and 72.

⁵³ ‘Tropical Australia Discussion’, note 51 above, p. 45.

physical perfection",⁵⁴ agreed with this formulation. "It is all very well to have a white Australia", he announced, "but it must be kept white. There must be immaculate cleanliness".⁵⁵ The working white citizens required ceaseless supervision and discipline. "It is desirable", advised Barrett, "to arrange for several experimental stations, at which settlers could be accommodated. Each station would be under the charge of a health officer".⁵⁶ Foucault's "carceral archipelago" in the so-called tropics, perhaps?⁵⁷ "In the future", advised Anton Breinl, "the pioneer should not be the settler, but the scientifically trained man".⁵⁸

Conclusion

By 1933, Barrett could confidently assert two medical facts, both antithetical to an older geographical understanding of disease. First: "The colored man working in the tropics has no physiological advantage over the white man, the bodily processes are the *same* in both cases." And second: "If tropical Australia had an indigenous infected population it would be in all probability scourged with tropical diseases."⁵⁹ With this anthropomorphic mobilization of pathology, a white Australia finally could be represented as a medical necessity, not just a national goal.

In 1911, the journalist C E W Bean wrote that "Australia is a big blank map, and the whole people is constantly sitting over it like a committee, trying to work out the best way to fill it in".⁶⁰ Medical geographies had proposed obstacles to white settlement, but laboratory methods altered this terrain, removing environmental obstacles and constructing in their place a thriving, obedient white citizenry. The demise of environmental determinism had sanctioned the birth of white Australia. Thus medicine was not just a means of knowing a territory, it offered in this case an opportunity to reshape it. As medicine was less obviously part of an environmental discourse, it became more centrally an element in the discourse of modernity and citizenship, where it has remained.

⁵⁴ J H L Cumpston, 'Presidential Address: Public Health and State Medicine', *Transactions of the Australasian Medical Congress*, 11th session, 1920, Brisbane, A J Cumming, 1921, pp. 77–87, on p. 77.

⁵⁵ J H L Cumpston, in 'Tropical Australia Discussion', note 51 above, p. 49.

⁵⁶ Sir James Barrett, 'The Problem of the Settlement of Topical Australia', in idem, *Twin Ideals*, note 44 above, vol. 2, pp. 286–91, on p. 288. See also his 'Tropical Australia', *United Empire*, 1925, 16: 37–43.

⁵⁷ Michel Foucault, *Discipline and Punish: The Birth of the Prison*, trans. Alan Sheridan, Harmondsworth, Penguin, 1991.

⁵⁸ Anton Breinl, 'The Object and Scope of Tropical Medicine in Australia', *Transactions of the Australasian Medical Congress*, 9th session, 1911, 2 vols, Sydney, W A Gullick, 1913, vol. 1, pp. 524–35, on p. 526. See also his 'Facts and Figures regarding Health and Disease in Northern Australia', *Transactions of the Australasian Medical Congress*, 11th session, 1920, Brisbane, A J Cumming, 1921, pp. 558–69.

⁵⁹ Sir James Barrett, 'Tropical Australia', *Australian Quarterly*, 1934, 24: 64–72, p. 72.

⁶⁰ C E W Bean, *The Dreadnought of the Darling*, London, Alston Rivers, 1911, p. 318.