Introduction: The Show Begins

During the 1870s, popular scientist Professor Bruce grew accustomed to improvisation as he travelled through the Eastern colonies of Australia. While visiting the timber town of Bulahdelah, on the Central Coast of New South Wales, he lectured on phrenology in his Irish brogue within the best space set aside by town residents for the job. In a hut knocked together from slabs of *Eucalyptus*, the faint glow of six candles in bottles flickered over the faces of thirty or so locals. The audience crowded onto "three boards deposited on three boxes or casks, in the shape of a triangle" to watch the Professor read heads. "I have seen many entertainments in our bush villages and on stations, but never such a gloomy one," declared a correspondent. "The more so, as I heard that this hut had been not long ago the depositary of a dead body, awaiting an inquest, and some one called it the 'dead-house'."[1]

Throughout Professor Bruce's tours, the Bulahdelah dead house did not rate as his most dispiriting evening. Nor did his earlier stay in a Victorian town, where an audience participant grabbed Bruce's beard, causing the lecturer to fall "upon his insulter with real 'science', and literally thump … him across the room and back again".[2] The nadir perhaps came in 1879, when the Irishman visited the Hunter Valley town of Greta, where prospective audience members leaked away to the competing spectacle of an "alligator" (whether alive or dead the newspaper did not tell).[3] For the locals, this science that claimed that character and intellect could be determined from the shape of a person's head – a popular subject often accompanied by public prodding of audience volunteers – could not trump charismatic reptiles. Fortunately, as he hauled himself north towards the sultrier climes of the Colony of Queensland, the Professor also enjoyed warmer receptions, perhaps the

[1] *Maitland Mercury*, 27 October 1877, 3.
[2] *North Eastern Ensign* (Benalla), 19 August 1873, 2.
[3] *Maitland Mercury*, 19 June 1879, 2.

result of honing his skills as much as audience inclination.[4] On the evening of a Boxing Day race meeting in 1883, he held enough public sway to give it to some lads "pretty hot" during public readings.[5] And by 1900, the "evergreen" lecturer won over his audiences with his "able manner" and illustrations sketched on a blackboard.[6]

Bruce worked at a time when science sprouted tendrils across the settler colonies of Australia and Aotearoa New Zealand. During the second half of the nineteenth century, new universities on either side of the Tasman produced graduates trained in anatomy and medicine and physics, with the first Australian university established in 1850 and the first in Aotearoa New Zealand in 1869.[7] Articulated whale skeletons haunted both the lawn of the National Museum in inner Melbourne (established in 1854) and the Colonial Museum in Wellington (established in 1865). Savants collected colonial plants and classified them within global taxonomies of flora. Great exhibitions lured crowds to witness the progress and innovation of colonial science. The Great Melbourne Telescope, installed in the city's observatory in 1869, projected the power of colonial astronomy to the world while gazing out at other planets. Geological surveys traced minerals that lay below the soil. The New Zealand Institute, breathed into life in 1867 by an act of Parliament, by the 1880s bristled with more than 1300 members of the local elite. In short, this bubbling half century saw Antipodean science distilled into institutional structures, sites for processes of increasing scientific professionalisation taking place globally.[8]

But Professor Bruce does not belong to that story.

Rather, he lives for us within a cadre of self-appointed professors who took science to the publics of even the smallest and dustiest new settlements. Such self-taught vernacular scientists made do with belligerence and borrowed titles. They catered to a public taste for emerging

[4] For example, see *The Western Champion* (Blackall), 4 July 1884, 2.
[5] *Australian Town and Country Journal* (Sydney), 27 January 1883, 38.
[6] *Wingham Chronicle and Manning River Observer*, 2 June 1900, 6; *Macleay Chronicle*, 8 May 1902, 3.
[7] The University of Sydney was established in 1850, and Otago University in 1869.
[8] See: Ross Jones, *Humanity's Mirror: 150 Years of Anatomy in Melbourne* (South Yarra: Haddington Press, 2007); AM Lucas, 'Baron von Mueller: Protégé Turned Patron', in Rod Home (ed.), *Australian Science in the Making* (Cambridge: Cambridge University Press, 1988), 133–152; Rebecca Priestley, 'A Survey of the History of Science in New Zealand', *History Compass*, 8 (6), 2010: 474–490; Robert Stafford, 'British Geological Research in Australia during the Nineteenth Century', in Rod Home and Sally Kohlstedt (eds.), *International Science and National Scientific Identity* (Dordrecht: Kluwer Academic Publishers, 1991), 75–96; Ann Moyal, *A Bright and Savage Land* (Sydney: Collins, 1986); 'Whale Skeleton Behind National Museum, University of Melbourne, 1862–1899', Photograph 2017.0071.00860, University of Melbourne Archives.

knowledges presented with panache, their trails revealing to us the contested nature of science and who could claim its authority.[9] Among the most prominent and ubiquitous popular scientists, phrenologists offered tangled versions of the cranial system developed by a Viennese physician at the end of the eighteenth century, adapting this contested knowledge into hybrid forms that they then sold to customers as public lectures or private assessments.

Popular phrenology lingers as an ideal artefact through which to study how, during times of transformation for both a region and popular practice, science could perform multiple functions, serving purposes that ranged from financial gain to social advancement to criminal abuses of interpersonal power. In the Tasman World, phrenologists wielded a transnational science in charged negotiations already overlaid by structures of colonisation, class, race and gender. They adapted it to local settings that could become unrecognisable almost from one day to the next, and which were cataclysmic for Indigenous peoples. Their grasp on power was not the expansive sovereignty of the great figures of history. It was limited – just a touch – and a different beast from that solidifying in the universities and museums.

Widely criticised even during the early nineteenth century, phrenology enjoyed success thanks to other virtues. The simplicity of its system rendered it widely understandable and capable of translation into pamphlet and lecture form for the consumption of autodidacts. It provided its practitioners with social authority. It seduced students and practitioners with its promise of teaching them about their innate selves, or about the ever-unknowable other. Its shows created space for play. And its conceptual elasticity meant that aficionados could apply it to individuals or entire populations.

While public head readings promised to reveal the identity of the palpated subject, it was the phrenologists themselves who often concealed layers of artifice. Travelling professors such as Bruce embodied an exquisitely optimistic form of self-crafting characteristic of the colonies, sites of both physical and social mobility that generated long-lasting anxieties about how to trust newcomers. Bruce spent decades touring the East Coast of Australia, and during the mid-1870s sailed across the Tasman Sea to also tickle audiences in Aotearoa New Zealand. But some observers smelled a rat. One Queensland newspaper alluded to

[9] Bernard Lightman, 'Science, Scientists and the Public: The Contested Meanings of Science in Victorian Britain', in *Evolutionary Naturalism in Victorian Britain: The 'Darwinians' and Their Critics* (Burlington: Ashgate Variorum, 2009), I.1–I.40. Lightman cautions that there can never be "a single, univocal meaning for science" (I.23).

the possibility of Bruce's true self as both a "theatrical amateur" and employee of the local sawmill.[10] A shapeshifter, Bruce shared the capacious title of 'phrenologist' with people who doubled as gold miners, fortune tellers, vagrants, petty criminals, ministers, physicians, actors, elocutionists, barbers and journalists.

Widespread phrenological literacy produced a lexicon of organs and faculties that tripped off colonial tongues as readily as we might today drop phrases from psychoanalysis or yoga into everyday speech. Every part of society dabbled, from the aspiring member of parliament who consulted a phrenologist for a private reading, to a Māori representative at a high-stakes meeting over land with government ministers. Many of these people did not take phrenology seriously, and to properly engage with this popular science, a history of its practitioners and their reception must engage with the joy, earnestness, theatre, wit, ambition, desperation and sometime tragedy of magnificently crumpled lives.[11]

Iterations of this science were at once recognisable but often also only loosely related, and sometimes contradictory. Some practitioners synthesised extensive knowledge of theory with their practices on stage or in private rooms and made phrenology a life's work. But many in this book plucked just one or two things from practical phrenology's toolbox, and often for a fleeting moment. The tool of choice could be one of platform oratory – flouncing scripts about natural laws and scientific truth. It might be a professional label – a one-line claim to occupation volleyed by a person dodging jail time for performing abortions or for vagrancy. Or it could be the theatre of scientific subjection alive in the performances of Indigenous people who made their livings from the settler-colonial stage. Yet practitioners, audiences and performers all rummaged in the same box marked "phrenology" for what were often crude but durable implements. What the box lacked in consistency it made up for in availability to the motivations and dreams of people who did not necessarily consider themselves to be acting scientifically.

This book therefore makes two interventions: it considers phrenology as an influential practice that played with colonial anxieties about false and shifting identities while enabling the mobilities of its often-shady practitioners. And it follows popular science into the sensory landscape inhabited by its diverse workers (such as Robert White in Figure 0.1), to

[10] *Queensland Figaro and Punch*, 19 December 1885, 7.

[11] The only other major work about phrenology in Australia, completed nearly three decades ago and never published, focused on the bourgeoisie and middle classes. See: Janice Evelyn Wilson, 'Signs of the Mind: Science, Psychological Knowledge and Social Hegemony in Colonial Australia' (PhD thesis, University of Western Australia, 1994).

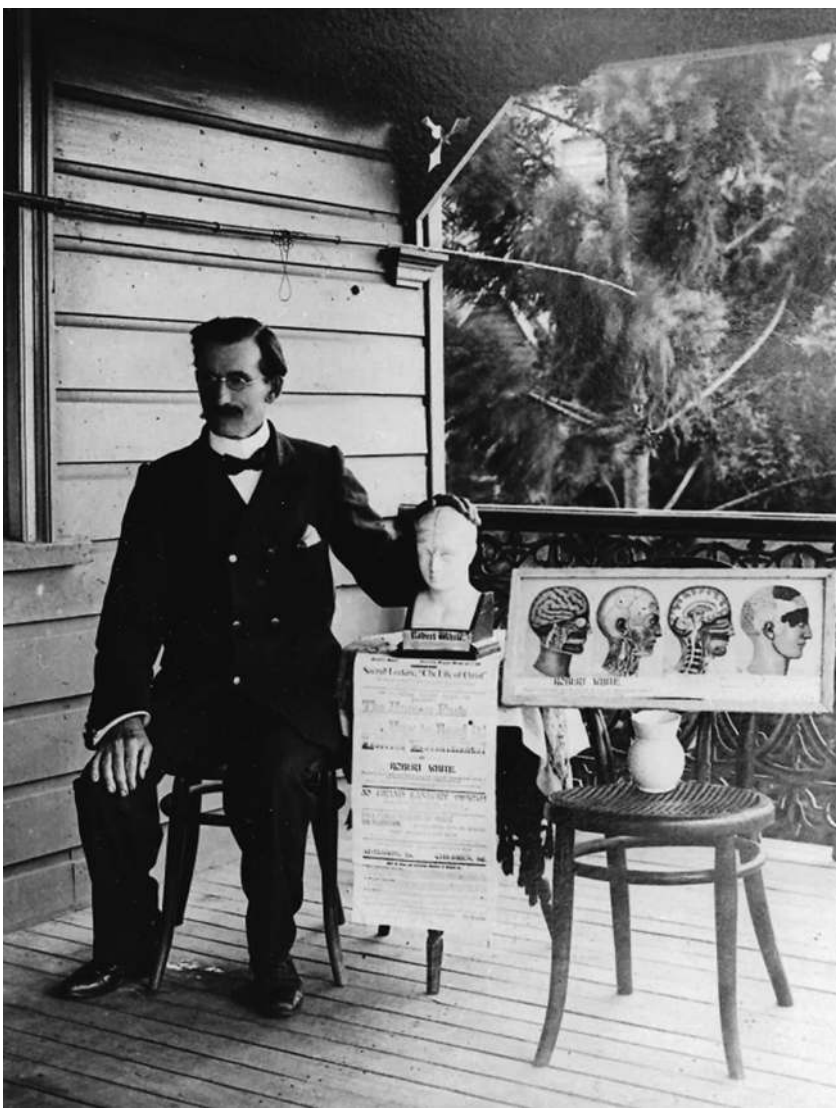

Figure 0.1 Robert White – trade unionist and lecturer in phrenology, pictured with a bust, diagrams and promotional poster. Date unknown. Picture supplied by descendant Loreley Morling.

better understand the interpersonal experiences and conflicts of its protagonists. The phrenological encounter becomes a starting point for accessing the tides of feeling and identity that characterised colonial life. This book considers the past on its own terms. But it also touches upon instabilities surrounding scientific authority that haunt us today.

0.1 Phrenology Heads South

The science that came to be known as phrenology was developed at the end of the eighteenth century in Vienna by physician Franz Josef Gall. He based his theory on a principle that the brain pushed against the skull during development and that the skull therefore took on the shape of the brain, allowing a shortcut to cerebral study through observation and palpation. Gall also declared that different parts of the brain performed specific functions. In the midst of emerging theories about brain and mind, and alongside the development of the disciplines of comparative anatomy and ethnology, his system carved up the brain and skull into twenty-seven specific 'organs'. The map of the brain developed by Gall created a hierarchy of mental functions. For example, organs related to spiritual connection to God were located at the top of the head, and the base instincts related to violence and sex drive nestled around the base of the skull.[12] Phrenology took its place alongside sciences of the skull and human type that included comparative anatomy, criminal craniometry, ethnography, nascent forms of psychology and – towards the end of the nineteenth century – population-based analyses of the brain, with the cranial measurements of Nazi doctors during World War II remaining one of the most commonly referenced types of cranial science in popular culture today.

Contested from the outset, phrenology was popularised in the UK and US during the early nineteenth century thanks to Gall's dissectionist and acolyte Johann Gaspar Spurzheim and the Scottish lawyer George Combe, garnering the interest of members of the middle classes, as well as some members of the élite. Spurzheim and Combe both added more organs to the system (Figure 0.2). They turned it into one of general utility for middle-class life of the period, and buffered its original biological determinism with the principle that people could improve within the reasonable limits of their neural inheritance.[13] A fortuitous bequest in

[12] John Van Wyhe, 'The Authority of Human Nature: The *Schädellehre* of Franz Joseph Gall', *British Journal for the History of Science*, 35, 2002: 19–23.
[13] John Van Wyhe, *Phrenology and the Origins of Victorian Scientific Naturalism* (Aldershot: Ashgate, 2004), chapter 2.

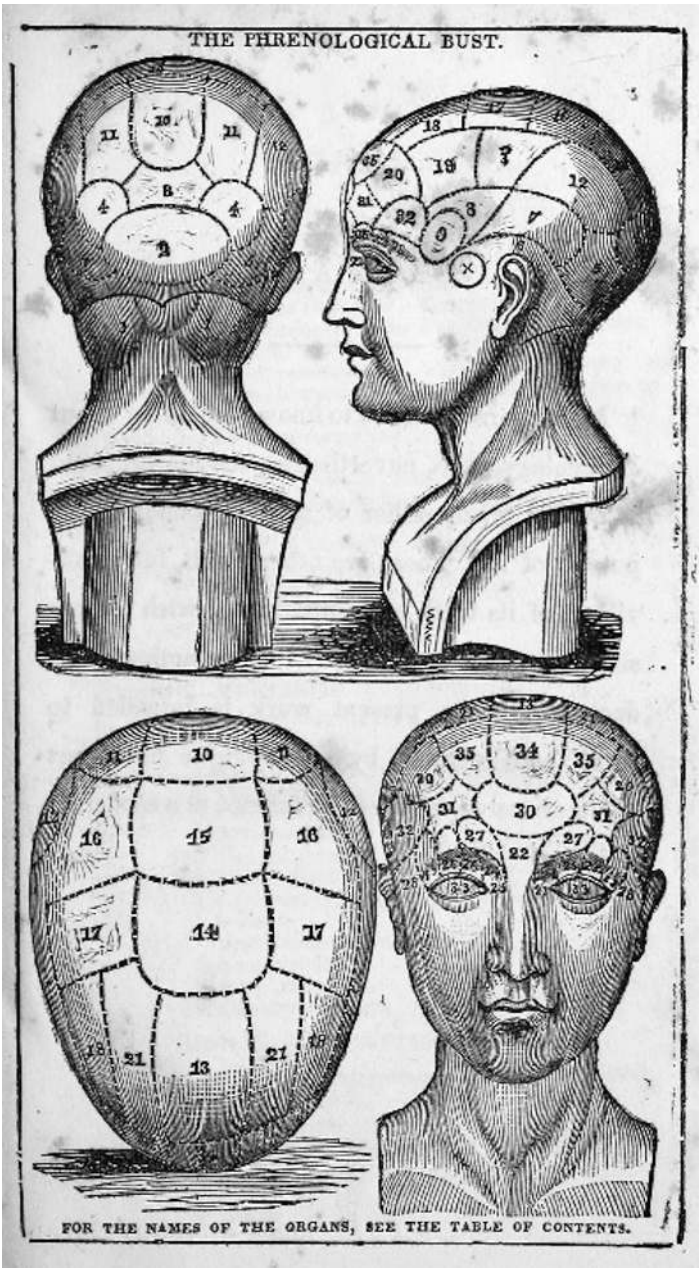

Figure 0.2 Combe's thirty-five organs (with modifications) as they appeared in 1846. Their organisation reflects the system's symbolic hierarchy. The organs denoting 'animal' feelings such as amativeness (sexual instinct) and destructiveness are located at the base of the skull, while veneration (religious worship) perches on top. From: 'The Phrenological Bust', in George Combe, *Elements of Phrenology* (New York: William H Colyer, 1846), iv.
Digitised version available through the Wellcome Collection online.

1832 helped to turn Combe's metaphysical treatise – *The Constitution of Man Considered in Relation to External Objects* – into a book that sold more copies than Darwin's *On the Origin of Species* during the nineteenth century.[14] In America, Spurzheim also won over leading doctors with a tour to New England in 1832, during which he literally lectured himself to death, his body dissected, measured and plucked of brain and locks of hair by friends in a post mortem that transfixed readers across the Atlantic.[15]

The early decades of phrenological knowledge coincided with the early phases of European colonisation in Australia and Aotearoa New Zealand, lands that belonged to a latticework of Indigenous groups for millennia before European explorers sighted their shores through the long reach of a telescope (an event that dates back to the sixteenth-century Dutch exploration of the northern and western Australian coastlines).[16] Maritime circuits of empire overlapped with Indigenous mobilities. For example, fishhooks found in northern Australia and dated to about 1200 years ago are thought to have come from beyond the continent, possibly from the Torres Strait or Polynesia.[17] Oral histories and archaeological evidence demonstrate that Indigenous Australians in the northern and north-western reaches of the country traded with Macassan trepang collectors from as early as 1650.[18]

Across the island continent, Indigenous Australians spoke at least 400 languages. Different groups traded objects and knowledge across territorial boundaries and pursued a range of cultural practices and modes of social organisation.[19] Human habitation in Australia dates back at least 60,000 years, a cavern of time well outside the imagination of the British when they established their penal colony at Sydney Cove on the ancestral country of the Eora people in 1788.[20] By 1816, when Spurzheim toured phrenology through England, the Colony of New South Wales still clustered around the eastern coastline close to Sydney, although it

[14] Roger Cooter, *The Cultural Meaning of Popular Science: Phrenology and the Organization of Consent in Nineteenth-Century Britain* (Cambridge: Cambridge University Press, 1984), 120.
[15] 'Death of Dr Spurzheim', *The Phrenological Journal and Miscellany*, VIII, 1832: 129–130.
[16] Shino Konishi and Maria Nugent, 'Newcomers, *c.*1600–1800', in Alison Bashford and Stuart Macintyre (eds.), *The Cambridge History of Australia, Volume 1: Indigenous and Colonial Australia* (Port Melbourne: Cambridge University Press, 2013), 47–48.
[17] Peter Veth and Sue O'Connor, 'The Past 50,000 Years, an Archaeological View', in Bashford and Macintyre (eds.), *Cambridge History of Australia, Volume 1*, 39–40.
[18] Shino Konishi and Maria Nugent, 'Newcomers, *c.*1600–1800', 52.
[19] Claire Bowern, 'Chirila: Contemporary and Historical Resources for the Indigenous Language of Australia', *Language Documentation and Conservation*, 10, 2016: 9.
[20] Billy Griffiths, *Deep Time Dreaming: Uncovering Ancient Australia* (Carlton: Black Inc, 2018), Introduction.

boasted a pastoral hinterland encroaching on the country of Aboriginal people on the Cumberland Plain . In April of that year, the Governor responded to spates of frontier conflict by sending military expeditions to kill and capture all Aboriginal people.[21] Meanwhile, Van Diemen's Land (an island offshore of south-eastern mainland Australia), evolved as a site of European farming, whaling, sealing and secondary punishment, although the traditional owners still maintained classical lifeways on country that would soon change irrevocably. By the time Spurzheim died in Boston in 1832, military endeavours in Van Diemen's Land to flush Aboriginal people from the bush ended in surviving Tasmanians agreeing to move to Flinders Island on the misinformation that the move was only temporary; instead, three-quarters of the 200 Aboriginal people who ultimately lived on Flinders Island perished there in exile.[22]

Across the Tasman, the ancestors of the Indigenous Māori arrived in South Polynesia – which comprises Aotearoa New Zealand and its surrounding islands – between 1100 CE and 1200 CE – and ever since have migrated internally and engaged in inter-iwi negotiation and conquest.[23] Around half a millennium of habitation preceded the first European visits – by Dutch explorer Abel Tasman in 1642 and Captain James Cook in 1769. The commencement of commercial sealing around the lower edges of the South Island in the 1790s took place around the same time that Gall, as a young doctor, began developing his theory of individual 'organs' in the brain from painstaking empirical observation.[24] In 1814 (when a European landed gentry was establishing itself in New South Wales), missionaries settled in small pockets in the Bay of Islands, entangling Māori in what Tony Ballantyne terms "webs of interdependence".[25] Yet Māori would far outnumber Europeans for decades yet, and developed a rich trade in agricultural produce, exchanging pigs and crops for European goods, and particularly firearms, objects that gave their name to the inter-tribal 'musket wars' that peaked during the 1830s.[26]

[21] Grace Karskens, *The Colony: A History of Early Sydney* (Crows Nest: Allen & Unwin, 2009), 507–515.
[22] Anna Haebich gives the figure of 200 people who moved to the island, with only 46 ever leaving when the group was finally moved to Oyster Cove (*Broken Circles: Fragmenting Indigenous Families* (Freemantle: Fremantle Arts Centre Press, 2000), 75).
[23] Atholl Anderson, Judith Binney and Aroha Harris, *Tangata Whenua: A History* (Wellington: Bridget Williams Books, 2015), 27, 97–103.
[24] Ibid., *Tangata Whenua*, 115–119, 136–137; Van Wyhe, 'The Authority of Human Nature', 18–26.
[25] David Denholm, *The Colonial Australians* (Blackburn: Dominion Press, 1979), 159–188; Tony Ballantyne, *Entanglements of Empire: Missionaries, Maori and the Question of the Body* (Durham, N.C.: Duke University Press, 2014), 17.
[26] Anderson *et al.*, *Tangata Whenua*, 142–144, 160.

Despite these pockets of European settlement, the first person to occupy the post of British Resident, James Busby, did not arrive until 1833.[27]

The period of phrenology's great popularisation in Scotland was met by another frenzy at the Antipodes: the rush for land in Aotearoa New Zealand, with unscrupulous land agents making deals with Māori and selling absurd quantities of land to unwitting investors in Australia and Britain.[28] By 1839, about 2000 Europeans lived there, and further pressure to establish settlements by groups of entrepreneurs rattled representatives of the British Government, who determined that it should try to establish authority over as much of the archipelago as possible, leading to the Treaty of Waitangi of 1840.[29] The terms of the treaty were ambiguous and differed between English and Māori versions; historians argue that the signatories could not have predicted the devastating impacts of colonisation that ensued. From this point, the heterogenous world of what James Belich terms "Old New Zealand" co-existed with the arrival of the "instant township".[30] With the total population of Aotearoa New Zealand surging by 1881 to more than half a million people overall and by 1901 to more than 800,000 – the recorded Māori population simultaneously declining from 44,097 to 43,112 – the landscape of these islands transformed more quickly and more drastically than in any other European settler-colonial site.[31]

The concept of the 'Tasman World', in use by Antipodean historians for some decades, frames a region of interconnection, and also arguably a distinct period.[32] As Alison Bashford observes, archaeological and other evidence suggests that, before the first Cook voyage, the Tasman Sea functioned as a 'Tasman Divide', with no known crossings by either Indigenous Australians or Māori.[33] The travels of people and products across the Tasman World from the mid-to-late eighteenth century wove

[27] Ibid., 184.
[28] Stuart Banner, *Possessing the Pacific: Land, Settlers and Indigenous People from Australia to Alaska* (Cambridge, Mass.: Harvard University Press, 2007), 63–67.
[29] Anderson *et al.*, *Tangata Whenua*, 195–202.
[30] James Belich, *Making Peoples: A History of the New Zealanders from Polynesian Settlement to the End of the Nineteenth Century* (Auckland: Penguin, 1996), 188–193.
[31] Censuses of New Zealand, 1881 and 1901, Historical Census Collection, Stats NZ. Available at: www.stats.govt.nz/census/previous-censuses/historical-census-collection. Accessed 28 February 2022; James Beattie and John Stenhouse, 'Empire, Environment and Religion: God and the Natural World in Nineteenth-Century New Zealand', *Environment and History*, 2007, 13 (4): 418.
[32] See, for example: Belich, *Making Peoples*, 131; Philippa Mein Smith, Peter Hempenstall and Shaun Goldfinch (eds.), *Remaking the Tasman World* (Christchurch: Canterbury University Press, 2008).
[33] Alison Bashford, 'World History and the Tasman Sea', *American Historical Review*, 126 (3), 2021: 922–925.