

Writing Waikato: John Muir's Contribution to Environmental Awareness

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Shortly after travelling through the Waikato in January 1904 environmentalist John Muir wrote to his friend and former colleague Robert Underwood Johnson of his delight in the New Zealand landscapes and the plant life that he had encountered:

I had a glorious time, so novel (and) reviving (that) I began botanical studies over again with all the wildness and enthusiasm of youth [...] In less than a month under influence of these Southern Cross wonderlands you would grow back into boyhood.¹

As an experienced and widely published observer of both physical and social environments, Muir kept a record of his time in Waikato that is distinctive. His texts, both journals and correspondence, are of interest precisely because they are science embedded in a social and philosophical discourse. The details of formal observations are recorded: the plant species, the landforms, the heights and distances, and these observations are complemented by drawings. But much more is conveyed by Muir's language of reporting in his journal and correspondence, and the extent to which this language reveals his philosophy of environmental awareness and concern.

Before turning to Muir's Waikato reflections in detail it is useful to have an understanding of his personal background and his stature in his chosen field. In the history of environmental writing, John Muir stands alongside George Perkins Marsh, Aldo

Leopold, Rachel Carson and James Lovelock.² His pre-eminence as an environmentalist is built on his life-long reading, voluminous writing, and frequent correspondence with the leading scientists, thinkers and politicians of the day. Muir was born thirty years before the age of the typewriter and his journals and letters were all written by hand. His original writings, including those on New Zealand, are available in the Holt Atherton Library at the University of the Pacific in Stockton, California.

Muir was born in Scotland in 1838 and his family emigrated to America in 1849. He travelled west to California from his first home in Wisconsin in 1868, finding an ecological niche and his spiritual home in Yosemite where he worked as a shepherd and saw miller. His careful observation, legendary climbing ability, and wide-ranging travels in the Sierra Nevada soon gained him a scientific following which he extended through his commitment to write for the *New York Tribune*, *The Overlander* and *The Atlantic Monthly*. Muir's writing was based on field sciences, particularly botany and geology, but the breadth of his vision and fluency of his writing style won him acclaim initially in the public domain, but ultimately in scientific and academic circles.

John Muir was aware of New Zealand and its location from an early age.³ He became one of the few global travellers of his day and a skilled recorder of environments-in-place. Although Muir travelled the globe in an era when the steam engine was beginning to change marine and rail transportation, he was not averse to stagecoach and horseback if the situation required it. With reference to his travels in New Zealand, commentaries on the purpose and timing of Muir's world trip in 1903-4 are of interest.⁴ By the time of Muir's visit to New Zealand his credentials were well established. His most distinguished biographer, the 1946 Pulitzer Prize winning Linne Marsh Wolfe, describes this final stage of his life (1900-1914) as 'Fruition and Struggle'.⁵ The fruition was marked by the inclusion of Yosemite Valley in Yosemite National Park in June 1906, the completion

of his world tour in 1903-1904, and a seven-month trip to South America and South Africa in 1911-12. Struggle was signified through the illness and loss of family and friends, but much more by the protracted battle for the Hetch Hetchy Valley. For more than a decade Muir and the membership of the Sierra Club argued passionately for conserving this unique catchment, but in August 1913 the resistance was finally overpowered by the State's developmentalist demands for a significant water reservoir to supply San Francisco. The Hetch Hetchy commitment perhaps prevented Muir from delivering more environmental commentary on New Zealand.

Muir's formal academic qualifications were modest. He spent only a brief time at the University of Wisconsin (from May 1861 to July 1863), but his lifelong interest in reading meant he read and understood the knowledge base of many leading geologists and botanists of the day. Donald Worster and R.M. McDowall, for example, cite Muir's botanical work with Asa Gray, the leading nineteenth-century American botanist.⁶ Gray worked with Muir in Yosemite in 1872, returning in 1877 with the pre-eminent British botanist (Sir) Joseph Hooker. Hooker had strong New Zealand connections through his botanical work at Kew, and after they met Muir corresponded with Hooker until the latter's death in 1911.⁷ Muir also read Hooker's associate Charles Darwin very closely and Darwin's support for evolution links directly to Muir's awareness of earth-forming processes.⁸

While the Sierra Club, Yosemite, and *Sequoia gigantea* may be the most widely recognised links to Muir, it is his work with glaciation that first created an awareness of Muir in the international science community. He was familiar with Hutton's *Theory of the Earth* (1795) and Lyell's *Principles of Geology* (1830). In September 1871, drawing on Agassiz, and with the support of field data tested with friend and fellow Sierra Club member, Joseph LeConte, Muir posited glacial action as the dominant formative agency in Yosemite.⁹ Josiah Whitney of the California Geological Survey was dismissive, but Muir's refutation,

primarily through publication in the proceedings of the American Association for the Advancement of Science in 1874, secured for him lifelong status as a field scientist. Muir's writing about New Zealand is grounded in this breadth of scientific knowledge and experience in field observation.

In assessing Muir's writing, it is possible and important to step beyond science and explore the literary qualities of his work, drawing attention to the imagery used and philosophical foundations of his texts. This task has been undertaken often in the published literature on Muir, but not generally in commentaries drawing on Muir's work in New Zealand.¹⁰ C. Michael Hall writes specifically about Muir's 1904 visit without dealing with these matters, but David Young's careful and complete work on the history of conservation in New Zealand has a panel entry that comments on Muir's philosophy and writing.¹¹ There is no doubt that Muir's understanding of the philosophies of environmentalism was well developed and that he had moved significantly from the narrow and somewhat Calvinist fervour that characterised family relations during his boyhood. The evidence for this claim is provided by Worster who reports that Muir's personal copies of Henry David Thoreau's *Walden* and *Excursions* are well annotated, and that Muir also spent some days with Ralph Waldo Emerson in Yosemite in May of 1871, and corresponded with him thereafter.¹²

Two passages in Richard Fleck's 1993 essay on Muir's 'Transcendental Imagery' deal with the links between Muir's writing and his philosophy. Fleck claims that Muir's writing

is characterised by insight into the inner workings or interrelationships of living natural objects to one another and the universal intelligence or spirit. When his descriptive language operates on these relational levels, he transcends far and above the [...] natural history so popular in his day [...]¹³

Fleck draws particular attention to the adjectives Muir uses to describe landscape, with often-repeated favourites including: 'ethereal', 'celestial', 'heavenly', 'bodiless', 'beatific', 'luminous', 'transfigured', 'blazoned' and 'radiating'.¹⁴ This heightened, almost mystical language certainly bears the imprint of both Thoreau and poet Walt Whitman, whom Muir had both met and read.

Understanding Muir's history and philosophy is important in the approach to his writing in his journals and correspondence in 1904. The local content that relates to the ecology and geology of the day is grounded in acute field observation, just as the commentary exhibits an international environmental awareness that was unmatched in its day. However, the ideas and language reflect his extensive reading and philosophical outlook. Muir had read and met most of the influential writers of his day, including Mark Twain and Rudyard Kipling as well as Whitman.¹⁵ Likewise, the volumes of John Ruskin and Thomas Carlyle in Muir's library are heavily annotated.¹⁶ The language Muir uses reflects international, but particularly American, ideas and usage of the era.¹⁷

Muir's record of his time in the Waikato is recorded in his journals and is a combination of scientific observation and more philosophical reflections. While his journals were never published, they provide an invaluable insight into both the region and Muir's outlook, which an examination of selected passages will highlight below.¹⁸

Muir left Australia with three fellow travellers on 11 January 1904, and first sighted New Zealand on Friday 15 January. He arrived in Auckland at noon, and on Saturday 16 January his party left Auckland on the 10 a.m. train for Rotorua. The journey took eight hours, as the train stopped frequently on its route via Frankton, Oxford (Tirau), and across the forest-covered Mamuku ranges. Muir walked and worked in Whakarewarewa on Sunday 17 January, frustrated throughout his stay that only minimal services were available on Sundays in New Zealand. He

travelled to Hamurana and to nearby Tikitere by boat on Monday. On Tuesday he took a stagecoach to Tarawera, observed the 'muds' deposited by the 1886 Tarawera eruption, crossed Lake Rotomahana, and walked up past the world-renowned Waimangu geyser to stay at the Waiotapu hotel. On Wednesday 20 January he took a stagecoach to Taupo, reporting on the botany and geomorphology en route. The next day his notes cover the vegetation and geothermal activities in and around Taupo. On Friday, Muir and his party began their exit from Waikato, travelling to the headwaters of the catchment by crossing Lake Taupo by steamer to Tokaanu, and taking a stagecoach up onto the volcanic plateau towards Waiouru. In little more than a week, Muir had completed his environmental observations in Waikato, and was undertaking the testing 42-mile horse ride to Pipiriki on the Whanganui River.

Muir's view of Waikato starts with his rather matter-of-fact, diarised observation from the window of his railway carriage on 16 January:

a level wide valley, fertile and cultivated and many trees planted, oak, elm and pine etc. Just as ascending grade is reached, within 20 or 30 miles of Rotorua, an interesting forest is reached through which the [rail] road runs to within a few miles of the hot spring region.

A more particularised extract from Muir's botanical field work a mile from Whakarewarewa on 17 January exemplifies the nature of Muir's field science and commentary:

In the afternoon went up to Summit Ridge grove, a patch of ancient forest. In the ridge patch of old forest saw good specimens of the two grand trees *Metrosideros robusta* [Northern Rata] and *Meterosideros tomentosa* [*Metrosideros excelsa*, Pohutukawa]. *Meterosideros robusta* said to have fine red blossoms. Magnificent smooth-barked shafts much buttressed at base and smooth and round

from 10 to 12 feet above ground to branches 50 or 75 feet above ground. Nearly every tree is decked with a handsome, single glossy-leaved climber like *Vaccinium andromedifolia*, red flowers in clusters, clings and climbs from rootlets from all a stem simple, often for 30 flowers or more, rope-like as thick at top as bottom; branches often equal in size and parallel, grey colour, wood exceedingly tough, though light, and makes fine elastic canes. This fine bright cheery-looking plant often outlives the tree that holds it aloft and never troubles parting with their bark. Large flakes of it are held by the climber and are swayed by the wind. These trees are also enriched by large masses of lily like plants in forks of branches next to the trunks, and by orchids and ferns in great numbers, though they are so well supplied with shining leaves and bright red flowers.

Here Muir's meticulous recording of the species and size of the trees and flowers he views is flecked with his characteristic eye for a carefully chosen word. The use of 'decked' for the vine entwined around the pohutukawa is suggestive of Christmas ornamentation, while the personification of 'never troubles' gives the creeper a curiously sangfroid quality which stands in contrast to the death grip the vine has on the tree.

Muir's geomorphological eye is apparent in an account of the Rotomahana traverse to Waimangu on 19 January. Muir started from Lake Tarawera,

then a walk of a mile or two over mud and ashes to Rotomahana Lake, three or four miles wide by whale boat. Desolate shores reeking with boiling and spluttering springs and steam jets, over which the boat was allowed to dance and thump. Thence along muddy channel of the Waimangu stream from the giant geyser and up 500 feet to hut overlooking the geyser [...] Did

not see the great geyser in action, though it displayed its power three times today.

If Muir had known that one of the greatest geysers in the world would play only from 1900 until 1 November 1904 (just nine months after his visit), he might well have been tempted to stay an extra day in the area. As with his description of the bush cited above, Muir's impression of Rotomahana is vivid, drawing attention to not only what he sees but what he smells and hears. The 'reeking' of the geysers expresses something of their distinctive sulphuric odour, while their 'spluttering' is both suggestive of the intermittent quality of the steam jets and an onomatopoeic evocation of their noise. The 'dance and thump' of the boat is a particularly pleasing image, the combination of the two contrasting verbs conveying both the fluid, rhythmic motion of the boat as it is lifted by the steam jet and its abrupt, awkward descent to the water.

The scenic and definitive nature of the youthful Waikato River is acknowledged in Muir's journal entry of 20 January 1904. He notes that the geysers of the Taupo region

are ranged along the magnificent Waikato River, the finest thing about Taupo, the little geysers and blow hole all toys compared with it. A broad flood gliding from Lake Taupo with majesty, like the Yellowstone from its lake, breaking into rapids and surges here and there, but mostly calm, full of swirls, little green islets here and there, daintily planted like the banks, for the climate is fine and there are no floods to spoil them.

Muir places the Waikato within the context of his American experience, paying the river the compliment of a comparison with the mighty Yellowstone. Its size dwarfs all that it surrounds and moves through, including geysers which are reduced to the level of 'toys'. Muir has an accurate eye for the various moods and movements of the river, from its tranquil 'gliding' near the

river mouth to the energy of the rapids. A more particularised description of the rapids in Muir's journal on 21 January is even more poetic: 'A fine view of jagged, beaten, folded and over-folded surges and currents.' The visual image combines the gentle, almost domestic imagery of the water and foam as beaten egg whites with the harsh abruptness and force of 'jagged'.

Muir was not just an observer of the natural world, but attuned to its effect on him. One final written observation, from Saturday 23 January, speaks both of Muir's scientific interest in glaciation and his emotional response to what he sees and experiences in the Waikato:

The snowy Shasta-like mountain Ruapehu 8,878 feet high, a grand object with its snow and glaciers (at least two on north-east side, a mile long), makes a noble show, the main kingly feature of the landscape, and which beguiled the long stage ride from Tokaanu to Waiouru, 44 miles. Never shall forget the brown plain, brown with grass in magnificent hummocks which shine in wind, and many other grasses not quite so wiry and tall, and heathworts.

The spectacular landscape ('noble', 'kingly', 'magnificent') makes a profound and indelible impression on Muir, the use of 'beguiled' suggestive of enchantment and delight.

In the four examples cited above both Muir's scientific eye and his non-science, his 'passion for nature', are evident.¹⁹ As Fleck notes, Muir's writing is creative and evocative; the language is rich and at times poetic, offering more than simple observations of the environment.²⁰ Muir's style is likewise imbued with the transcendentalism so often associated with his writing.²¹ In the 6,500 words of his New Zealand journal, we find more than sixty occasions where Muir refers to landscapes or plants as 'charming', 'glorious', 'fine', 'picturesque' or 'magnificent'.

Muir's correspondence of the time provides further evidence of his passion and philosophical approach to his time in the Waikato and New Zealand. Here his personal, emotional response to the Waikato is even more marked. As the letter cited at the beginning of this discussion powerfully conveys, what Muir experienced in New Zealand's 'wonderlands' transported him back to 'boyhood'. Writing to the Parson family in June 1904 he exults in the thrill of the new:

I was glad to get your letter for it is always pleasant to hear from and be remembered by fellow travellers whose company one has enjoyed in the midst of God's beautiful wildness in new strange lands. I spent about a week in the kauri woods and had a glorious time. The 'kauri pine', *Agathis Australis* [...] is one of the very noblest and most impressive of all the great and beautiful trees whose acquaintance I've made in my long wanderings.²²

Two extracts from Muir's letters to his patient wife, Louie Strentzel Muir, highlight the transformative nature of his experiences. Before coming to New Zealand he wrote in a predominantly factual mode of his scientific desire 'to get a good general view of both islands with their geysers, strange forests and glaciers'.²³ However, the tone completely shifts after his New Zealand travels. Gone is the rather flat, uninspired voice of a traveller determined to check one more place off his travel list. It is replaced with a voice of energy and enthusiasm, of refound youth:

[...] floras are so novel and exciting I had to begin my botanical studies over again, made big piles of specimens, working night and day, counting all labour as nothing. Have travelled hard studied hard and enjoyed and eaten hard, with health and strength renewed.²⁴

The local value of Muir's writing of the Waikato is perhaps greater than the contribution it makes to a wider understanding of his work. Place references are frequent, and Muir's traverse of the area can be precisely mapped. Muir was a field scientist, 'in' the area not above it, and he writes about the region substantially and with flair. Muir's writing of the Waikato can be understood in two ways, first by looking at the author and his text to ensure we hear and understand his particular voice, and then to decode the ideas about Waikato as 'place' in the social and political economy of the early twentieth century. Muir is not a standard science writer, but he does provide a perspective and materials of significance to our understanding of place.

Muir needs to be separated from the significant number of travellers in nineteenth-century New Zealand. Starting with the missionaries, many of these writers recorded their hardships and observations (especially of Maori), and Waikato was an area of interest once the early explorations of the coastal margins had been documented. The Waikato River provided a reasonable internal route, and the geo-thermal parts of the region were of great interest to early travellers and commentators. The daily observations of John Bidwill (1839), Ernst Dieffenbach (1841), George Angas (1847) and George Grey (1849) are brought together by Russell Duncan in a useful volume.²⁵ But 50 years later Muir encountered a different economic, scientific and physical environment. Wharves, ships, trains and stagecoaches had replaced the landings, canoes, tracks and footpaths described by earlier travellers. The New Zealand Institute was established in 1867, universities in 1869, the first conservation provisions were introduced in the 1874 Forest Act. Thomas Kirk's 1895 *Forest Flora of New Zealand* was the strongest reaction to the despoliation of New Zealand's natural landscape. At the time of his visit Muir observed perhaps the worst impacts of the destructive conversion of forest to pasture; seven million hectares of forest, much of it on marginal land, had been burned between 1840 and 1910.

Muir's field commentaries on this transformed environment are those of a mature scientist. While some species have been renamed or re-classified, the descriptions that Muir provides accord very well with contemporary scientific understandings of the environment in 1904. Muir's writing of science is distinctive; he does not report narrowly on the geology of Waikato in the manner of Ferdinand von Hochstetter,²⁶ or on the botanical distributions of species.²⁷ His writing of the Waikato, and of New Zealand in general, is ecological and often addresses environmental impacts that he understands on the basis of international travel and experience that are unparalleled in his age. Throughout his trip he refers to the short-sighted way forest has been burnt to provide pasture, such as his lament on 16 January 1904 about the burning of the forest near Wellington.²⁸ This provides a direct link to his experience in Yosemite and the career-shaping confrontation with Gifford Pinchot.²⁹

There are also comparative references to iconic places (Yellowstone, Mt Shasta, McCloud River) and vegetation (cedars of the Himalaya, 'hills are dry and brown like those of California in summer',³⁰ 'farmers' homes like those of England'³¹) that serve as international references. While Muir's stamina and work ethic remain remarkable, he recognises his age and experience. At one point when jumping around on boulders as a 66-year-old, he notes that he 'found my feet had not forgot their cunning'.³² It is his passion for forest and mountain ecologies that maintains him, as the correspondence to Robert Underwood Johnson with which this article began clearly indicates.

As an author, Muir was known to be a relentless drafter of text, and many of the digital copies of his correspondence are drafts in various stages of development. His journals, however, are written in the field, in some cases in the instant, and yet they often have a captivating lyricism and immediacy that hold the reader's attention. His journals and correspondence from New Zealand also reveal traces of the transcendental Muir so

prominent in his earlier activities and writing. Adam Sowards describes this voice as being aligned

to spiritual roots, couching much of his rhetoric in religious expression. Furthermore, he provided an ideological foundation for the [environmental] movement, defining environmentalism in religious terms and through spiritual experience.³³

A final question about Muir's journal is: what was his intention for the text? He used his journals as an *aide memoir* throughout his writing career. The expressions he used to capture an experience were developed and re-written in his published texts. While there are many references in his correspondence to the novelty and appeal of his experiences in the Waikato, there is no published text that draws on his journal of 1904. Wolfe claims that Muir remained committed to writing about his travels in 1903-1904 and 1910-11:

Muir was sufficiently absorbed by his experiences in Australia and New Zealand to want to publish them, and his later notebooks refer several times to the state of the Australian and New Zealand Forests, especially in comparison with those of South Africa.³⁴

It seems likely that Muir was diverted from this action by the need to fight the Hetch Hetchy campaign, and that the loss of this campaign effectively curtailed his writing career.

Although Muir's New Zealand journals were never published, they remain an important resource for scientists, environmentalists, and those interested in the history of travel writing and place, particularly because of the skill, accuracy, and descriptiveness of his writing. While Muir's experience was first hand and very directly engaged with the environment, he was a visitor and not a resident. He thus saw the Waikato in a transitional time; much of the lowland native forest cover had been removed, but the wetlands had yet to be converted to

pasture. More broadly, Muir saw New Zealand at its seasonal best (high summer). His view may have been influenced by the conditions but, as one of the pre-eminent environmental writers of his age, his concerns about the speed and environmental impact of New Zealand's 'development' (particularly the clearance of forests) are clearly reported in his journals.

Although Auckland had grown to more than 100,000 people in 1904, Hamilton and Rotorua combined did not total 5,000. The Waikato and New Zealand environments and economies Muir saw were still in settler mode. Given his personal experience in California, and that of his wife's family, these 'frontiers' were not new to Muir. Muir's own lived experiences were perhaps being revisited in a new land, and his concerns about the central role of the forest and the bush are easy to understand. On the other hand, his contribution to natural science is consistently valuable, and he fills some important gaps in our understanding of Waikato at this time. In his journal, Muir's writing about *Metrosideros robusta* [Northern Rata], his interest in geo-thermal activities of the day, and his despair about the replacement of forests with grazing sheep all alert us to aspects of local and national environments that are expressive and of his time.

The most poignant point, however, is that the excitement and revitalisation that Waikato and New Zealand offered Muir were not fully reflected in his subsequent work. In Wolfe's terms, in Muir's final years his travels brought to fruition his awareness of environments internationally, but his commitment to the Hetch Hetchy struggle essentially prevented his full articulation of that awareness. Muir provided the platform for ecological and environmental awareness, but failed to have this translate into policy to protect the places that were so dear to him.

Notes

- 1 University of the Pacific Library, Special Collections, Holt Atherton Collection, John Muir Correspondence, p. 2, letter from John Muir to [Robert Underwood] Johnson, 18 June 1904, <http://digitalcollections.pacific.edu/cdm4/document.php?CISOROOT=/muirletters&CISOPTR=3035&REC=10>.
- 2 George Perkins Marsh, *Man and Nature: Or Physical Geography as Modified by Human Action* (New York: Charles Scribner and Co., 1864); Aldo Leopold, *A Sand County Almanac* (New York: Oxford University Press, 1947); Rachel Carson, *Silent Spring* (London: Hamish Hamilton, 1962); James Lovelock, *Gaia: A New Look at Life on Earth* (New York: Oxford University Press, 1987).
- 3 C. Michael Hall, 'John Muir's Travels in Australasia, 1903-1904', in Sally M. Miller, ed., *John Muir in Historical Perspective* (New York, Peter Lang, 1999), pp. 286-308.
- 4 Ryan maintains it was a tree-hunting venture, endorsed by the American President, and supported by shipping magnate Edward Henry Harriman. Muir's deification of the redwood had been challenged, and Ryan feels Muir had a point to prove.
- 5 Linnie Marsh Wolfe, *Son of the Wilderness: The Life of John Muir* (Madison WI: Alfred Knopf Press, 1945), pp. 288-348.
- 6 Donald Worster, *A Passion for Nature: The Life of John Muir* (New York: Oxford University Press, 2008); R.M. McDowall, 'Biogeography in the Life and Literature of John Muir: A Ceaseless Search for Pattern', *Journal of Biogeography*, 37.9 (2010), pp. 1629-36.
- 7 Joseph D. Hooker, *The Botany of the Antarctic Voyage; Part II, Flora Novae-Zelandiae* (London: Lovell Reeve, 1855).
- 8 William Frederic Bade, *The Life and Letters of John Muir* (London: Baton Wicks Publications, 1996), p. 152.
- 9 Worster, pp. 193-99.

- 10 See, for example, two collections of writing on Muir edited by Sally Miller: *John Muir, Life and Work* (Albuquerque: University of New Mexico Press, 1990) and *John Muir in Historical Perspective*.
- 11 Hall, 'John Muir's Travels'; David Young, *Our Islands, Our Selves: A History of Conservation in New Zealand* (Dunedin: University of Otago Press, 2004), p. 108.
- 12 Worster, pp. 212-13.
- 13 Richard F. Fleck, 'John Muir's Transcendental Imagery', in *John Muir: Life and Work*, ed. by Sally Miller, p. 141.
- 14 Fleck, p. 145.
- 15 Wolfe, *Son of the Wilderness*.
- 16 T. Gifford, 'Muir's Ruskin: John Muir's Reservations about Ruskin Reviewed', in *John Muir in Historical Perspective*, ed. by Sally Miller, pp.143 and 147.
- 17 See, for example, 'American Literature 1820-1865', in *The Norton Anthology of American Literature*, ed. by W.W. Norton, pp. 917-2584.
- 18 The full text of Muir's 1904 dairy notes from 11 January to 1 March is available in the *John Muir Newsletter*, 17.2/3 (2007), 1-18. Subsequent references to the diary, in the form of dates, are provided in the body of the article.
- 19 Worster, subtitle of volume.
- 20 Fleck, p. 145.
- 21 Fleck summarises transcendental referencing in Muir's texts.
- 22 Letter to the Parson Family, June 1904, http://digitalcollections.pacific.edu/cdm4/page_text.php?CISOROOT=/muirletters&CISOPTR=3031&CISOBX=0&OBJ=3032&ITEM=1.
- 23 Letter to Louie Strentzel Muir, 11 January 1904, <http://digitalcollections.pacific.edu/cdm4/document.php?CISOROOT=/muirletters&CISOPTR=3765&REC=9>.
- 24 Letter from John Muir to Louie Strentzel Muir, 29 February 1904, http://digitalcollections.pacific.edu/cdm4/page_text.php?CISOROOT=/muirletters&CISOPTR=3120&CISOBX=0&OBJ=3122&ITEM=1.

- 25 Russell Duncan, *Early Walks in New Zealand, Up to 1850* (Wellington: Whitcombe and Tombs, 1918).
- 26 Ferdinand von Hochstetter, 'Lecture on the Geology of the Province of Auckland', 24 June 1859.
- 27 For example, William Colenso, *Excursion in the Northern Island of New Zealand in the Summer of 1841-42* (Launceston, V.D. Land: Printed at the Office of the Launceston Examiner, 1844); Johann Karl Ernst Dieffenbach, *Travels in New Zealand: With Contributions to the Geography, Geology, Botany and Natural History of that Country* (London: J. Murray, 1843); Thomas Kirk, 'Notes on the Botany of Certain Places in the Waikato District', *Transcripts of the New Zealand Institute*, 3 (1871), pp. 142-47.
- 28 On 28 January Muir makes similar observations in relation to Picton and on 14 February he writes of the destruction of forests in Canterbury.
- 29 Wolfe, 275-76.
- 30 Muir's diary, 28 January 1904.
- 31 Muir's diary, 29 January 1904.
- 32 Muir's diary, 12 February 1904.
- 33 Adam M. Sowards, 'Spiritual Egalitarianism: John Muir's Religious Environmentalism', in *John Muir in Historical Perspective*, ed. by Sally Miller, p. 123.
- 34 Wolfe, p. 303.