

# New Zealand's Changing Natural History

EVIDENCE FROM DUNEDIN, 1868–1875

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IN ENVIRONMENTAL HISTORY, New Zealand holds a special place as a fairly large but isolated land mass, which experienced both human occupation and then European colonization in relatively recent times. An Australian ecologist, Tim Flannery, suggests that 'New Zealand is a completely different experiment in evolution to the rest of the world', showing us 'what the world might have looked like if mammals as well as dinosaurs had become extinct 65 million years ago, leaving the birds to inherit the globe'.<sup>1</sup> The changes to the natural environment which followed when humans and other mammals eventually reached New Zealand have been dramatic and specific, and, in the case of European colonization, are also well-documented.

Two influential American studies have made use of the New Zealand case. One, by the geographer, Andrew Clark, was published in 1949 under the title *The Invasion of New Zealand by People, Plants and Animals*, although in fact it only dealt with the European transformation of the South Island.<sup>2</sup> Clark worked from the premise, as one could 50 years ago, that 'the Maoris are believed to have lived in harmony with the region and to have altered its pristine character little if at all'.<sup>3</sup> Given this premise, New Zealand seemed the perfect 'before and after' scenario in which to describe human impact upon a 'natural' ecosystem.

More recently, Alfred Crosby published *Ecological Imperialism: The Biological Expansion of Europe, 900–1900* (1986), containing a lengthy chapter on New Zealand.<sup>4</sup> In this he likened the early ships arriving on New Zealand's shores, dropping off Europeans and their livestock, as well as their rats and their weeds, to 'giant viruses fastening to the sides of a gigantic bacterium and injecting into it their DNA, usurping its internal processes for their own

1 Tim Flannery, *The Future Eaters: An Ecological History of the Australasian Lands and People*, Chatswood, NSW, 1994, p.55.

2 Andrew Hill Clark, *The Invasion of New Zealand by People, Plants and Animals: The South Island*, New Brunswick, 1949.

3 *ibid.*, p.44.

4 Alfred W. Crosby, *Ecological Imperialism: The Biological Expansion of Europe, 900–1900*, Cambridge, 1986.

purposes'.<sup>5</sup> He used New Zealand data to demonstrate that 'the success of European imperialism has a biological, an ecological, component'.<sup>6</sup>

It is surprising that since Crosby painted the broad brushstrokes in his book, no New Zealand historians have taken a closer look at the paint. Crosby's book was decidedly 'macrocosmic', dealing with a millennium of world history — and not just human history — in the space of 300 pages. The present article ventures unabashedly in the opposite direction. It is a 'microcosmic' study of interaction between Europeans and the natural environment in one area, Dunedin, mostly between 1868 and 1875, to see what this approach reveals about the process of change.

In Dunedin, the changes which took place were recorded and dwelt upon as they happened. Further, the people who kept a record and stressed the need for proper investigation of changes in animal and plant distribution were often key players in the course of events.

During the 1860s, when the first concerted efforts to 'acclimatise' exotic animals and birds occurred, some settlers were prepared to introduce almost anything. This included species of which most of them had never heard. At one point, the Nelson Borough Council proposed importing six Venetian gondolas, to be placed on the lake in the Public Gardens, but a local politician protested at such extravagance. Why not just import a pair, he said, then let Nature take its course?<sup>7</sup>

William Dick Murison began a more systematic approach. From 1866 until his death in 1877, he was Chairman of the Otago Acclimatisation Society, intimately involved in the transfer of European birds, trout, deer and several other species to the Dunedin area. He thought a list of these introductions should be 'compiled and placed in the records of the New Zealand Institute. Such a compilation', he said, 'would then be available for the purposes of science. There was no doubt', he felt, 'that the introduction of stock, such as the Society had brought into the country during the last few years, would in the course of time have a great effect upon the indigenous flora and fauna of the country'.<sup>8</sup>

One of Murison's colleagues on the Society's committee was John Turnbull Thomson, the provincial surveyor. When the Otago Institute — which eventually became the local branch of the Royal Society — was formed in 1869, he considered that one of its tasks should be 'to bring accurate observation to bear on the rapid changes now taking place in the flora and fauna of this part of New Zealand; as, for instance, the disappearance of the fern from certain valleys near Dunedin and other populated parts, and the growth of clover, grasses, and weeds of Europe in their stead; the disappearance of wild pigeon, kaka, and quail, before

5 *ibid.*, p.227.

6 *ibid.*, p.7.

7 G.M. Thomson, *The Naturalisation of Animals and Plants in New Zealand*, Cambridge, 1922, p.61.

8 Otago Acclimatisation Society, *Seventh Annual Report*, Dunedin, 1871, p.7.

the spread of European settlement, and the increase of imported birds, animals, and fishes'.<sup>9</sup>

Robert Gillies, also a surveyor, described 'Some Changes in the Fauna of Otago' to the Institute in 1877.<sup>10</sup> 'We have changes going on now under our notice,' he said, 'old forms gradually passing away, and new ones coming on the scene in their place, but who is to foretell what is doomed and what is to endure? No doubt much may be done with a view to the future. But the irrecallable past is gone without the data being preserved which now we wish we had, and it only remains for us to save the shreds and patches which linger in the memory of old settlers.'<sup>11</sup>

In their old age, two men who had been long-serving members on the Otago Acclimatisation Society's council made similar attempts. George Malcolm Thomson gathered the richest individual collection of information on Dunedin's early natural history. He lived in the city from 1871 and served on the Acclimatisation Society's council during the 1880s and 1890s. He collated all available data on introduced species in a major work on *The Naturalisation of Animals and Plants in New Zealand*, published in 1922. A great deal of Thomson's evidence came from Otago, and, although he only set out to record the changing distribution of the exotic biota, he included much about indigenous species. One chapter, for instance, described the 'Interaction of Endemic and Introduced Faunas'.

In 1915, Thomson also wrote precise 'Nature Notes' on Dunedin's town belt.<sup>12</sup> According to his evidence, 'the vegetation of the town belt and its neighbourhood in March, 1848', when Dunedin was first settled, 'included about 310 species of flowering plants and 73 species of ferns and lycopods (club mosses). I estimate that 11 species of flowering plants and 61 species of ferns, etc. have disappeared, and are no longer to be found here, but they have been replaced by 115 species of introduced flowering plants.' He considered that 'the fauna has changed even more profoundly. Leaving seabirds out of account, there were over 30 species of [native] birds to be met with in and about Dunedin in these early days. Now only five occur at all commonly, eight more are occasionally met, and six or seven have been recorded once or twice within the last score of years.' Perhaps Thomson's most poignant remarks concerned the laughing owl, a species whose predatory role in pre-European South Island was described in extraordinary detail by the paleo-ecologist Trevor Worthy.<sup>13</sup> Thomson said it 'was certainly not uncommon in the bush country from Ravensbourne to the

9 *Otago Witness* (OW), 10 July 1869, p.5. The native bird species mentioned are kereru (*Hemiphaga novaeseelandiae*), kaka (*Nestor meridionalis*) and koreke (*Coturnix novaezelandiae*). Native 'fern' was usually bracken (*Pteridium esculentum*), but here the reference was probably to some less resilient species.

10 R. Gillies, 'Notes on Some Changes in the Fauna of Otago', *Transactions and Proceedings of the New Zealand Institute* (TPNZI), X (1877), pp.306–22.

11 *ibid.*, p.307.

12 'Nature Notes' II, III, OW, 10, 17 February 1915.

13 T.H. Worthy, 'Quaternary Fossil Fauna of South Canterbury, South Island, New Zealand', *Journal of the Royal Society of New Zealand*, 27, 1 (1997), pp.67–162.

Heads, till quite a few years ago. My last record is one night in May, 1903, when one — perched on a tree in my garden in Newington — called repeatedly to its mate among the Marinoto plantations.’ The species became extinct about 20 years later.

Alexander Bathgate’s anecdotal account of ‘Some Changes in the Fauna and Flora of Otago in the Last Sixty Years’ was also published in 1922.<sup>14</sup> As a 76-year-old, looking back to Dunedin in the late 1860s, he said he could ‘well recall being . . . awakened by the concert of the bell-birds when living at Montecillo, just across the Town Belt . . . Parakeets were abundant, both the red-fronted . . . and the yellow-fronted. . . . For some years they were continuous residents in the bush at the Glen, Mornington. . . . Even kaka . . . were at times to be seen in the suburbs, and were abundant . . . in the native forests which then covered many of the surrounding hills, the clearing of which accounts for their total disappearance from our neighbourhood. This cause is also responsible for the extinction of the canary,’ he added, meaning the yellowhead (*Mohoua ochrocephala*), ‘of which I have seen large flocks travelling alone amongst the tree-tops on Pine Hill.’<sup>15</sup> Furthermore, native bats, ‘in 1863 and for at least ten years after were not uncommon flitting about in the dusk in the suburbs of Dunedin’ and ‘lizards . . . were numerous on the open parts of the Town Belt, where grasshoppers . . . absolutely swarmed’.<sup>16</sup>

It is difficult, now, to imagine the immediate surroundings of Dunedin as they were in the 1860s. However, it may be helpful to call up a mental picture of native forest such as is still found in parts of the West Coast of the South Island — not the beech forests of the mountain ranges, but rather what is referred to as ‘mixed podocarp’ forest. In the 1860s around Dunedin, Bathgate recalled, there was a ‘great forest which covered the [Otago] peninsula and extended on the northern shore of the harbour from the Heads to about Ravensbourne, and thence back over the summit of Mount Cargill to Waitati. Skirting the upper end of the North-east Valley, it covered Pine Hill, and, dropping into the valley of the Leith, which it filled, climbed upwards, clothing the shores of Flagstaff.’ He spoke of ‘the pines which grew in large numbers throughout the greater part of it’,<sup>17</sup> but by ‘pines’ he did not mean *Pinus radiata*, as we now would, but the native pines — red pine, which is rimu, black pine, which is matai, white pine, which is kahikatea, as well as miro and totara. It was a forest rich in ferns, and still containing a wide variety of native bird life.

Much of this disappeared within a decade. The extent and variety of native vegetation in particular areas around Dunedin may be gauged, between 1868 and 1878, from the precise descriptions provided by a printer, Peter Thomson (no relation either to G.M. or J.T. Thomson), who wrote regularly in the *Otago Witness* of his ‘Rambles round Dunedin’. His attitude towards the indigenous

14 A. Bathgate, ‘Some Changes in the Fauna and Flora of Otago in the Last Sixty Years’, *New Zealand Journal of Science and Technology*, 4, 6 (1922), pp.273–83.

15 *ibid.*, pp.277–8.

16 *ibid.*, p.273.

17 *ibid.*, pp.279–80.

flora, as for many of the more sensitive settlers at this time, was loving but sacrificial. January 1869, for instance, found him following 'the new track which has been blazed through the great forest which covers the country to the north of Mount Cargill and onwards to Blueskin'. As he went he 'gathered some beautiful and rare ferns' and seedlings of the rimu (*Dacrydium cupressinum*), 'perhaps the most graceful of all the trees in this district'. But he anticipated that a road would soon be built through the forest. 'Indeed,' he said, 'that will become a necessity some day, for the land must be opened up to be of use'.<sup>18</sup>

The removal of bush sealed the fate of many native birds in the area, their numbers probably much reduced with the invasion of the forests by ship rats radiating out from Port Chalmers, and then by cats. The precise causes of the decline of the indigenous fauna were debated at the time, and are still debated. A definite component in the scene, however, was the increasing presence of exotic, mostly European, birds. Such birds had sentimental appeal to colonists, but were also often specifically introduced to perform tasks, especially the eating of insect pests, which native birds had failed to do well enough, or to 'replace' the dying native birds. To use ecological jargon, whether or not the exotics directly competed with native species, they certainly took over some of the niches in remnant indigenous ecosystems which natives had previously occupied.

The activities of Richard Bills, a 'bird fancier of large experience',<sup>19</sup> provide the detail of what was taking place. The Otago Acclimatisation Society commissioned him to bring small birds from his home town, Brighton in England, to Dunedin. Following negotiations made with Murison and others during 1867, Bills and his son caged about 1500 birds and came out to New Zealand with them on the *Warrior Queen*. Five hundred and twenty-four survived the journey, including 110 starlings, 95 thrushes, 65 blackbirds, 42 chaffinches, 22 hedgesparrows, 40 goldfinches, eight greenfinches, eight yellowhammers, 50 skylarks, three housesparrows, and ten redpolls.<sup>20</sup>

The Acclimatisation Society took charge of these birds in January 1868. Some were liberated in the Society's grounds, near the centre of Dunedin. Others were sent further afield — two blackbirds and four thrushes to the Upper Harbour; the same, plus four goldfinches, to Palmerston for release in Hampden Bush; blackbirds, thrushes, chaffinches, goldfinches and housesparrows to Halfway Bush; blackbirds and thrushes to Johnny Jones's farm near Waikouaiti, and so on.<sup>21</sup>

Bills found it worth his while to return to England for a further consignment. He had more birds for Dunedin by February 1870, together with others imported on behalf of the Oamaru Society. He received 30 shillings each for blackbirds and skylarks, a little more for goldfinches. One thrush realised £4. Back in England a year later, he soon amassed another 120 cages of skylarks, 100 cages

18 All quotes from OW, 6 February 1869, p. 4.

19 OW, 11 March 1871, p.5.

20 OW, 25 January 1868, p.14; 1 February 1868, p.13. The thrushes were song thrushes (*Turdus philomelos*).

21 OW, 15 February 1868, p.9; 29 February 1868, p.13.

each of sparrows, robins, chaffinches, yellowhammers and blackbirds, 85 cages of thrushes, 60 cages of goldfinches, linnets and redpolls, two pairs of blackcaps and one nightingale. Otago wanted more, and the Canterbury Acclimatisation Society had also engaged him to bring out birds to the value of £500.<sup>22</sup> All these species are now established in Otago and New Zealand, except for the linnet, blackcap, nightingale and robin.<sup>23</sup>

Acclimatisation had become big business. Bills returned to Christchurch in 1872 with about a thousand birds, then arranged yet another shipment. By this time, the Otago Acclimatisation Society had run out of money for major importations, following the Provincial Council's reduction of their annual subsidy from £500 in 1871 to £200 the following year. But, as Murison could say by then, 'fortunately . . . nearly all the most valuable kinds of insectivorous birds . . . to be found in Great Britain, are already successfully acclimatised in the Province'.<sup>24</sup> Bills, in other words, had done his job.<sup>25</sup>

The picture so far is one of bush and native birds in the Dunedin area in decline, and of European settlement and European birds on the rise — an ecological 'revolution' in other words, a miniature to match Alfred Crosby's mural. However, this is only half the picture. There is evidence of another revolution going on at the same time, but spinning in the opposite direction. The first revolution concerned the colonization of a physical environment by an exotic flora and fauna. The counter-revolution was a subtler one. It might be described as the colonization of European minds within New Zealand, by the indigenous flora and fauna.

Both revolutions remain in progress today. Native ecosystems are still in decline, but Europeans no longer openly facilitate the process. It is now impelled forward more by biological forces in opposition to human endeavour, notably by the effect of possum and deer on native forest. As for the second revolution, this is now strongly evidenced by a conservation movement which expresses a very real pride in the uniqueness of New Zealand's flora and fauna.

In Dunedin, Peter Thomson contributed to the early stages of this second revolution. He increased the significance of his rambles, not only by publishing reports on them, but also by encouraging others to accompany him and by establishing the Dunedin Naturalist Field Club. He first suggested this at a meeting of the Otago Institute in April 1871.<sup>26</sup> 'All the members of the Institute',

22 Otago Acclimatisation Society Minutes, MS 378, Hocken Archives (HA), Dunedin, 10 February 1870; OW, 19 February 1870, p.14; 5 August 1871, p.9; 27 May 1871, p.15; 4 March 1871, p.6.

23 Colonists often called the greenfinch (*Carduelis chloris*) the 'green linnet', but the bird referred to here is the English linnet (*Acanthis cannabina*). Bills supplied both housesparrows (*Passer domesticus*) and hedgesparrows (*Prunella modularis*); the 'sparrows' mentioned could have been either species. The 'robins' were, of course, English robins (*Erithacus rubecula*).

24 Otago Acclimatisation Society, *Eighth Annual Report*, Dunedin, 1872, p. 5.

25 Richard Bills made enough money out of bird dealings to start his own sheep farm in New South Wales. His son Charles stayed on in Dunedin, and capitalized on skills he had gained making cages. He became the manufacturer of Australasia's first wire mattresses, setting up a very successful business in Cumberland Street. OW, 12 February 1876, p.18; *Cyclopaedia of New Zealand: Volume 4: Otago and Southland Provincial Districts*, Christchurch, 1905, p.361.

26 Otago Institute Minutes, 18 April 1871, p.29, M1 128A, HA, Dunedin.

he said, 'ought to be Field Naturalists, and never lose an opportunity of securing specimens, whether for the Museum or their own collections'. He also spoke of 'the personal effect of such work on a man, both mentally and bodily'.<sup>27</sup>

No such field club had ever been attempted in Australia or New Zealand before this, so it was an important colonial precedent. Unlike the Otago Institute and all earlier scientific assemblies in New Zealand, it encouraged the direct observation of nature in the field, rather than just the discussion of it indoors.

Thomson, through his rambles, became acutely aware of environmental change. In 1871 he said that 'there is one thing in connection with our bush which not only the botanist but every lover of nature must regret, and that is the rapid rate at which it is disappearing'. He feared that 'a few short years and the only forest left will be patches here and there in inaccessible places, where it would not pay to remove the trees'.<sup>28</sup> He formulated no conservation programme out of this awareness, but took younger people out into the field with him who, after his death, moved increasingly towards active conservationism. Peter Thomson helped them to see what changes were taking place and what needed saving. The outing to Forbury in 1874, for instance, turned out to be 'rather a profitless excursion . . . for, in a natural history sense, the district is nearly spoiled by some improvements that are being carried out, the collecting ground being nearly all buried by the clay from a road formation'.<sup>29</sup> In the same year, 'proceeding up the Leith Valley . . . a general feeling of regret was expressed at the ruthless way this picturesque locality is being spoiled, and finely wooded slopes rapidly denuded of the trees, all for the sake of a few cords of inferior firewood'.<sup>30</sup>

Arthur Beverly, whose name lives on in Dunedin's Beverly-Begg Observatory, served as president of the Field Club in 1873–74. He cultivated native plants, which, in Dunedin in the late 1860s, was a most unusual hobby. All the prizes at the local Horticultural Society at the end of each show — and there were dozens of them — related to the growth and display of exotic trees, exotic flowers, European fruit and European vegetables. Beverly was respected enough to become president of the Horticultural Society in 1870 and 1871. In the spring show of 1872 he received an award for 'the best twelve native shrubs' — the first prize ever for natives — with his display of 'a splendid mountain veronica in bloom; a pimelea from the West Coast in bloom; and red and white birch'.<sup>31</sup> By 1873, when George Gould of Christchurch reported flowering the Mount Cook lily (*Ranunculus lyalli*) in his garden, Henry Tewsley of Dunedin proudly replied that he had already done so for *two* seasons in his garden in Roslyn.<sup>32</sup>

Native birds attracted increasing attention in the same period. The publication in quick succession between 1870 and 1873, of Thomas Potts's articles on birds

27 OW, 23 September 1871, p.2.

28 *ibid.*, p.22.

29 Dunedin Naturalist Field Club Minutes, 17 October 1874, M1 533A, HA, Dunedin.

30 OW, 9 October 1875, p.15.

31 OW, 24 December 1870, p.10; 2 November 1872, p.4. There is no exact record of the species of hebe (veronica), pinatoro (pimelea) and beech (birch) exhibited.

32 OW, 8 November 1873, p.19.

in the *Transactions of the New Zealand Institute*, Frederick Hutton's *Catalogue*, and Walter Buller's *History of the Birds of New Zealand*, illustrates this.<sup>33</sup> All three items were noticed and discussed by the Dunedin press.<sup>34</sup>

In his 'Rambles round Dunedin', Peter Thomson made the occasional reference to unusual bird sightings. Walking up a gully below Flagstaff in 1871, for instance, he saw yellowheads and 'a pair of those rare birds, the Saddleback', and he saw a saddleback again near the Nuggets in 1872.<sup>35</sup> By this time there is clear evidence of widespread concern in Dunedin over the decline of native species. A correspondent going for a 'holiday ramble' around Milton in 1872 specifically noted the absence of native birds. In another 1872 article there is casual mention of a boy shooting kaka at Pine Hill, but by 1876, 'the native kaka, once so plentiful near town, cannot be met with'. The Dunedin press noted a report in the *Timaru Herald* in 1873 that 'native birds are being exterminated in the Waimate bush in the most ruthless manner'.<sup>36</sup>

Concern focused in particular on the tui (*Prothemadera novaseelandiae*). In April 1872, a Green Island resident wrote that, 'since the opening of the shooting season the crack of the fowling-piece has become incessant, and many of our native feathered race have become a prey of the fowler. A few days ago a youthful sportsman bagged twenty-five tuis, a bird somewhat rare here for some time. A few feats like this would extirpate the melodious parson-bird'.<sup>37</sup>

The Otago Acclimatisation Society held a meeting in 1875 on the 'wanton destruction of birds'. Gibson Turton, a Dunedin lawyer, said 'one man recently came boastingly to the railway train, and took his seat with thirty tuis. These were birds that were supposed to be protected. That man, however, was a new chum, and he shot them down. The tui was both a songster and a useful bird. Our New Zealand birds, which seemed very little in song and appearance, should not be shot down recklessly, but new chums destroyed them without the slightest consideration'.<sup>38</sup>

Members of the Acclimatisation Society now lobbied for the appointment of rangers. Introduced game and English small birds remained the first priority, but their awareness had definitely expanded to include concern for native birds. In 1874, they learnt of 'a great deal of shooting [which] goes on in the bush at the back of Burke's brewery' — now the Dunedin suburb called, simply, Burkes. They 'resolved that a ranger be appointed whose duty it will be to visit the bush on both sides of Port Chalmers for the purpose of preventing the destruction of birds both native and English'.<sup>39</sup>

33 T.H. Potts, 'On the Birds of New Zealand', TPNZI, II, (1869), pp.40–78, III (1871), pp.59–109, V (1873), pp.171–205, VI (1874), pp.139–53; F.W. Hutton, *Catalogue of the Birds of New Zealand*, Wellington, 1871; W.L. Buller, *A History of the Birds of New Zealand*, London, 1873.

34 OW, 2 July 1870, p.4; 11 November 1871, p.15; 20 April 1872, p.15; 13 December 1873, p.5.

35 OW, 15 July 1871, p.17; 16 March 1872, p.7.

36 OW, 23 March 1872, p.2; 19 October 1872, p.15; 29 April 1876, p.15; 4 October 1873, p.14.

37 OW, 27 April 1872, p.10.

38 OW, 16 October 1875, p.7; Otago Acclimatisation Society, *Tenth Annual Report*, Dunedin, 1875, p.29.

39 Otago Acclimatisation Society Minutes, 8 October 1874.

A particular incident, from two years earlier, may well have crossed their minds. In October 1872, Robert Gillies presented to the Otago Institute 'the remains of two kiwis which had been captured by a dog in the immediate vicinity of Dunedin'. Joseph Drake, he explained, 'had been out in the bush at the back of Burke's Brewery, hunting cattle, and was attracted by his dog worrying a bird. On going up to it he found the bird now produced partly devoured, but still fresh and warm. The dog then also caught the companion bird. . . . The finder, Mr. Drake, had no idea whatever that there was anything rare or unusual in the matter, and had thrown away the skins, which, however, after some difficulty, were recovered, though in a mutilated state.'<sup>40</sup>

Gillies identified the birds as grey kiwi (*Apteryx owenii*) and described this as 'the first authentic instance on record of the kiwi being caught on the eastern coast of the Middle [South] Island', although the discussion which followed mentioned two or three earlier occurrences in the area. Among the members present, 'a general desire was expressed that the fact of these strange and rare birds being in the neighbouring bush should be more widely known, so that settlers and persons traversing the bush might take some care to preserve them, and to observe their habits'.

Unfortunately, no more opportunities arose to do so. Two months later 'a furious bush fire raged on Mount Cargill . . . sending out during the day enormous volumes of smoke, which obscured the sky for a distance of several miles'. At night, 'the mountain side was lighted up by the lurid glow'.<sup>41</sup> This may well have put paid to whatever kiwi were left in the area.

In 1872, during the same meeting of the Otago Institute when Gillies displayed his kiwi, J.S. Webb gave a botanical paper. He had gathered every plant species he could find from a square mile of tussock by Puni creek, close to Invercargill, which he considered 'an area typical of very considerable districts in this part of New Zealand'. Cattle had been introduced into his sample plot about 15 years before, and an old road ran close by, yet it now included 'very few introduced plants, and those chiefly of three or four species'. Webb wondered 'whether the indigenous vegetation would not in most cases be found able to hold its own against the strongest of intruders from foreign climes, unless the latter should be favoured by fostering circumstances, such as accompany the agricultural occupation of the soil by a civilized race'.<sup>42</sup>

Much has been made of the nineteenth-century European theory of the 'inevitable' displacement of indigenous species by European ones, without remarking that, even in the 1870s, Webb and other botanists questioned its applicability to plant distribution. If the dominance of exotic species was not biologically determined, then the extinction of indigenous plants, or of kiwi, or indeed of Maori, was no longer a foregone conclusion. Not only would settlers develop their interest in native species, but it also became reasonable to try to save them.

40 OW, 9 November 1872, p.11.

41 OW, 28 December 1872, p.16.

42 J.S. Webb, 'Notes on Plants Collected near Invercargill', TPNZI, V (1872), pp.360-3.

There has never been any dispute about the overall decline of the indigenous biota and the rise of the exotics, simply a need to fill in more of the details. But the second revolution — the entering of the indigenous biota into settlers' minds and their consequent concern for it — is usually traced back no further than about the turn of the century, and is linked to the activities of Leonard Cockayne in Wellington, Harry Ell in Christchurch, and George Malcolm Thomson in Dunedin. This is when 'conservationism' in New Zealand is usually supposed to have begun. However, Dunedin evidence shows that some settlers were fully aware of and concerned about native flora and fauna at least by 1870.<sup>43</sup>

Nor was their concern just 'utilitarian'. The examples given are of supposedly 'useless' species, like the kiwi and the tui, which demonstrate an interest in them for their own sake. The evidence of parallel concern about the destruction of native forest, which became manifest in both Canterbury and Otago in the late 1860s, is rather more ambiguous. Taking care of the forests appealed partly because it guaranteed a continuous supply of timber for development — props for mine shafts, sleepers for railway lines. Native timber could be very "useful".<sup>44</sup>

The current conservationist lobby, in pressing its claims, might benefit from taking on board the Dunedin evidence of settlers' early concern for indigenous flora and fauna. It adds historic weight to the reasoning of the writer Philip Temple, that Europeans have 'been here [in New Zealand] long enough now to have their own powerful and valid relationship with the land' — that, for many Pakeha, 'their identity as New Zealanders is rooted in a reverence and love for nature and landscape which, while different, is just as valid and powerful as the Maori's'.<sup>45</sup>

The New Zealand Conservation Authority has recently called for a careful assessment not only of 'traditional Maori relationships with native plants and animals' but also of 'the heritage of European cultures'.<sup>46</sup> This acknowledges that there are two origins for environmental concern in New Zealand; however, it is still largely unacknowledged that Polynesian and European heritages have both *resulted* in consideration of and for the indigenous environment through several generations. Recognition of this New Zealand tradition, with due emphasis on the contribution of people of European descent, could be a stepping stone to its wider practice.

It may well be that a close look at responses to the natural environment in other provinces would give a similar picture to the one found for Otago. If so, the early appearance of this 'counter-revolution' has a further significance, for it affects

43 See also L.E. Lockhead, 'Preserving the Brownies' Portion: A History of Voluntary Nature Conservation Organisations in New Zealand, 1888-1935', PhD thesis, Lincoln University, 1994.

44 See Graeme Wynn, 'Conservation and Society in Late Nineteenth-Century New Zealand', *New Zealand Journal of History*, XI, 2 (1977), pp.124-36; Graeme Wynn, 'Pioneers, Politicians and the Conservation of Forests in Early New Zealand', *Journal of Historical Geography*, 5, 2 (1979), pp.171-88.

45 Philip Temple, 'Natural values — a personal view', *Public Access*, 9 (1997), pp.5-6.

46 New Zealand Conservation Authority, *Maori Customary Use of Native Birds, Plants and Other Traditional Materials: Interim Report and Discussion Paper*, Wellington, 1997, p.81.

our perception of how settlers thought. Too often nineteenth-century Europeans in New Zealand are characterized as uncaring pioneers, who feared or hated the bush and who wrote off native species as biologically bound for extinction.<sup>47</sup> Perhaps many thought like that, but, at least in Dunedin by the 1870s, some did not. The picture we paint, as historians, needs to include these colours.

PAUL STAR

*Dunedin*

47 For a fuller discussion of this, see Paul Star, 'From Acclimatisation to Preservation: Colonists and the Natural World in Southern New Zealand, 1860-1894', PhD thesis, University of Otago, 1997.

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