

THE CULTURAL HISTORY OF THE EASTERN HEMISPHERE SUBANTARCTIC ISLANDS

BERNADETTE HINCE

Introduction

“No landscape is completely cultural; all landscapes are the result of *interactions* between nature and culture.” Environmental historian Donald Worster (1990: 1144).

On a map the subantarctic islands almost vanish into the blueness of the surrounding Southern Ocean, which you must cross by ship to visit them. These southern islands or groups of islands lie in latitudes that are home to the Antarctic circumpolar current, the world’s largest ocean current, driven eastward by the westerly winds (Fig 1).

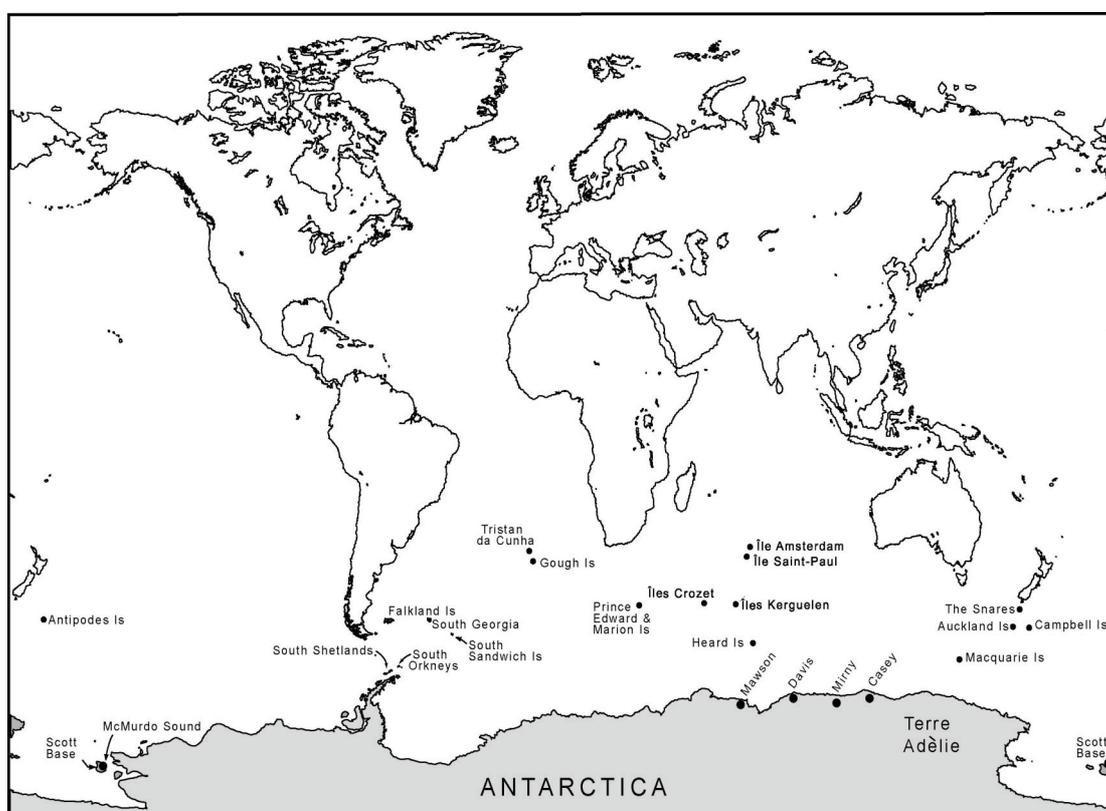


Fig 1 The subantarctic islands © Richard Barwick

This paper looks at some subantarctic islands of the eastern hemisphere — the French islands of Île Amsterdam, Île Saint-Paul and Îles Kerguelen; Australia’s Heard, McDonald and Macquarie Islands; and New Zealand’s Auckland and Campbell Islands. The earliest of these islands to be discovered, Île Amsterdam (37°50’S) was found in the 1550s, the most recent, Heard Island (53°10’S), in 1853 (Hince, 2005: xviii, 118). All were uninhabited at the time of their discovery by explorers, masters of merchant ships or sealing captains. Most subantarctic islands have remained uninhabited throughout history, at least in the normal sense of the word —only the Falkland Islands and Tristan da Cunha in the western hemisphere have the permanent settlements, births, marriages and deaths, trade and migration that a Westerner like myself associates with inhabited places. By contrast, the French, Australian and New Zealand subantarctic islands are all islands without islanders. Without ongoing settlements, to what extent can we say that they have any cultural history?

Subantarctic islands vary considerably in size. Of those considered here, the largest, Îles Kerguelen (2580 square miles, 6675 square kilometres), is smaller than Corsica but bigger than Bali. In the subantarctic, only the Falkland Islands are bigger. The smallest subantarctic island, McDonald Island (53°05'S), is about a square mile. What defines a small island? In 2007 Holly Everett (2007: 2) suggested to a meeting of the Small Islands Culture Research Initiative (SICRI) that small islands had either a small landmass or a small population. If we used the latter criterion, the subantarctic islands of the eastern hemisphere would be among the smallest islands of all — invisibly small, in fact, because of their lack of any permanent population.

How do concepts of culture or heritage apply in these places? And without getting too enmeshed in disciplinary debates, what do we mean by culture and cultural history? The oldest meaning of the word culture in English, that of “cultivating the soil”, is recorded by the Oxford English Dictionary from 1450 (OED online, www.oed.com). The modern sense of the word — culture as “the distinctive ideas and customs of a particular society, people, or period” — does not appear until 1850. Interestingly to me, the Oxford definition does not mention place as an element of culture, though culture is often attached to particular places — to countries, for example, or to regions within them.

Can these islands, hundreds or even thousands of miles from each other, have any common culture, as defined above? People on inhabited islands create and pass on their own memories and stories. Almost no-one has been born on subantarctic islands, and no coherent society on them maintains tradition or relates history. This means that the few people who visit the islands have no easy way of inheriting the sorts of stories which normally give us our sense of place and history. Furthermore, those who travel to the islands or work on them do not necessarily remain a discrete group when they return home. It is hard to think of any kind of cultural history enduring in such circumstances, even though various fragments of culture might exist, either on the islands or elsewhere.

People have painted and photographed subantarctic islands and written about them. Apart from a large body of scientific and historical research papers, only a couple of dozen popular books (including accounts of shipwrecks, recollections and published diaries) take Île Amsterdam, Île Saint-Paul, Îles Kerguelen, Heard, McDonald, Macquarie, Auckland or Campbell Islands as their main subject.¹ Poems by Henry Kendall and Peter Porter have the name of Îles Kerguelen in their titles. Porter’s images of the “gangrened shore” and “ocean boiling on the inshore fangs of reefs” describe a landscape often portrayed as hostile.² Some evidence of a cultural involvement using the islands as a setting exists, though it exists away from the islands themselves. There were no land mammals on the islands until people landed there, but various mammals — fur seals, sea lions and sea elephants — came ashore each spring and summer to give birth and to moult. As soon as people discovered this, sealers went to the islands to harvest the fur seals and the elephant seals. The fur seals soon disappeared, usually ‘sealed out’ within years of an island’s discovery. Elephant seals were taken in large numbers, too, but their populations may have been more robust, and the waning demand for elephant oil during the late 19th Century helped to spare them the same fate. Our knowledge of these animals is patchy. On Macquarie Island, for example, we are still not sure what species of fur seal lived there when the island was discovered, because it was exterminated locally by intensive sealing in the first few years after discovery. It is likely that we will never know.³

Apart from the arrival of sealing ships, the islands were seldom visited. Explorers took any available chances to visit subantarctic islands when they sailed south. The islands offered fresh meat and water and, if the weather permitted, chances for exploration. On some islands small parties of men stayed for a year or more while the main expedition went south, but the main goal of southern exploration was (and still is) the South Polar continent, Antarctica.

Attempted settlement in the subantarctic

On a few occasions, people tried to settle permanently — on Île Saint-Paul, Îles Kerguelen or Auckland Island. The settlements failed. In World War II New Zealanders, fearing that German vessels might shelter on their subantarctic islands, sent coastwatchers to occupy the

Auckland and Campbell Islands. The first four men of these 'Cape Expeditions' arrived at Campbell Island (52°33'S) in 1941, and built a hut to survey the waters of Perseverance Harbour. The weather information they gathered and transmitted was so useful that later coastwatching parties included trained meteorological observers. The island became part of New Zealand's forecasting network after the war, and small parties of men established semi-permanent scientific or meteorological bases on other islands too — on Australia's Heard and Macquarie Islands, and on Îles Crozet, Île Amsterdam and Îles Kerguelen. In the later decades of the 20th Century tourist companies began offering expeditions which called at Macquarie Island and the New Zealand islands. Today's visitors are either workers destined for the small bases maintained on the islands, or tourists attracted by their remoteness, plant life, wildlife and scenery.

Introductions and extinctions

Subantarctic islands are among the remotest places on earth, and the least known. So it comes as a surprise to find that human actions have changed the faces of these islands. As well as harvesting their seals, penguins, whales and fish, we have introduced an astonishing variety of foreign animal and plants there — the list includes (but is not limited to) rats, mice, rabbits, dogs, cats, mink, goats, pigs, cattle, horses, donkeys, reindeer, brush-tailed possums, wekas, domestic fowls, ducks, geese, salmon, trout, dandelions, pine trees, eucalypts, and New Zealand flax. Some species became naturalised and affected the native plants and animals, including the millions of seabirds that breed on the islands each summer. By the second half of the 20th Century, the balance had turned in favour of protecting the native species and controlling or culling introduced ones. As detailed below, workers began removing the cattle, sheep, pigs and rabbits, and in the process noted that these once-domesticated animals had begun to adapt to their harsh environments in ways which might be of interest to future animal breeders (an irony given that human settlements had failed to thrive). This cycle of introduction, naturalisation and removal of various animals and plants is a large part of the story of the subantarctic islands, and one which is common to almost all of them.

Îles Kerguelen (49°20'S) was discovered and claimed by the French in 1772. Like other subantarctic islands it is cold, windy and wet — a place, as historian A.G.E. Jones (1971: 22) said bluntly, which no one would visit without a compelling reason. The transit of the planet Venus in 1874 provided a compelling reason. Dozens of astronomical expeditions set out from Europe and America to observe the transit at various points on the globe. A French expedition went to Campbell Island. British, German and American expeditions went to Îles Kerguelen. When the British ships stopped at Cape Town on the way, its men collected 150 live rabbits on Robben Island. Naval officer Cyril Corbet (1875: 60) described the release of the rabbits on 22 October 1874 at Îles Kerguelen:

*A hole being dug in the hill-side, the bottom of the box was knocked out, and the poor little things left to burrow if they liked; but I'm afraid they have not a chance against these molyhawks and these other sea birds that also live in holes in the ground.*⁴

In fact, it was the seabirds that did not have a chance. On Îles Kerguelen the single greatest consequence of the British transit of Venus expedition was not any advances to astronomy that resulted from the visit, but the damaging effects on native plants of the burrowing, plant-eating rabbits.

On New Year's Eve 1901 a German South Polar Expedition arrived at Îles Kerguelen (Anon, 1903: 41). Rabbits hopped around the men when they came ashore. In less than 30 years the animals had almost completely extirpated one of the island's most spectacular and distinctive plants, Kerguelen cabbage (*Pringlea antiscorbutica*), a close relative of domestic cabbage occurring only on the Indian Ocean subantarctic islands. The expedition's leader Erich von Drygalski (1904: 132) noted that the plant, once abundant from sea level to 2000 ft (610 m), now grew "only on isolated islands and inaccessible cliffs". Opinions of its edibility vary, but it was eaten by visitors and fed to livestock. Kerguelen cabbage can tolerate waterlogging, salt spray, cold, and high nutrients in areas where animals have enriched the soil, such as seal rookeries. It is helpless against rabbits. Their introduction to subantarctic islands 130 years

ago was a disaster. The rabbit has been introduced on more than 800 islands worldwide, including those in the subantarctic. It has fundamentally changed landscapes. “Without question”, said the biologist Brian Coman (1999: 41), “the most dramatic environmental effects of overgrazing by rabbits are to be found on islands”. They are still on both Îles Kerguelen and Macquarie Island (where they were also taken in the 1870s) in great numbers. French and Australian researchers have investigated ways of reducing or eliminating them from these islands. In 2007 Australia announced that it would fund a seven-year program to eradicate rabbits, rats and mice from Macquarie Island.

On the Auckland Island group (50°43'S) mice were inadvertently introduced in the 19th Century though, remarkably, rats never became established there, and some other deliberate introductions (muscovy ducks, wekas and brushtail possums) also failed. But the rabbit, as on Macquarie Island, thrived. On one of the Auckland Islands the introduced silvery-grey and dark blue rabbits had developed enough distinctive characteristics to be known as the 'Enderby Island' breed.⁵ During the 1980s and 1990s, New Zealand's Rare Breeds Conservation Society began taking examples of wild animals (including rabbits) to mainland New Zealand for preservation. An eradication program for Enderby Island's estimated 5000–6000 rabbits then began, using an anticoagulant poison bait spread by helicopter, followed by a spotlighting and trapping program with rabbit-tracking dogs. The bait was also toxic to mice, the only other introduced mammal still living there. By the 1994–95 summer there was no evidence of either rabbits or mice on Enderby Island (Rare Breeds Conservation Society of New Zealand, c2000; Torr, 2002: 322–3).

Several native subantarctic species have become extinct since the islands were discovered. Australia's engagement with Macquarie Island (54°37'S) began when the island's only two land birds, the Macquarie Island rail and Macquarie Island parakeet, were still living. Harold Fletcher, who visited Macquarie Island briefly in December 1930 with Douglas Mawson's ship-based British, Australian and New Zealand Antarctic Research Expedition, had no doubt that the extinction of both birds towards the end of the 19th Century was due to one thing alone. “Cats”, he wrote, “wiped out the only two species of land birds” (Fletcher 1984 239). Others have attributed the extinctions of these native birds to a complex interaction of contributing factors which might have included the introduction of rats, wekas or rabbits. Both the rail and parakeet co-existed with cats on the island for about 60 years, and their populations then declined within a few years of the introduction of the rabbit.

Making use of the natives on Îles Kerguelen

In the early 20th Century whaling was dominated by Norway, whose whalers hunted in remote places including the subantarctic. Whale and elephant seal oil processing factories had few requirements: they needed space, large tanks for the oil, fresh water for the boilers, a harbour for ships that brought the catch in — and of course, a good catch of whales or elephant seals. In 1908 the Norwegian firm Storm, Bull and Co built a factory on Îles Kerguelen (Elliot 2001 1). It was a smelly business. When the Îles Kerguelen factory started processing whale and seal blubber, the smell was noticeable six miles (10 km) away. The Norwegians hunted whales from April until September, taking 442 whales (almost all humpbacks) in the first few years. But whaling was not profitable for long at the island, and the factory soon began processing the blubber of elephant seals instead — the resulting oil was used for lighting, lubrication, and in food, cosmetics and soap. Elephancing on Îles Kerguelen was interrupted by World War I, and revived only briefly after the war. In two early cases of accidental pollution in the 1920s, the ships *Lozère* and *Erivan* sank on the island's north with full cargoes of oil.⁶

The factory closed in 1929 when factory ships, which could process blubber into oil onboard, took over the processing. Its remains are still there as a picturesque rusting reminder of the enterprise (Bajard, 1964: 119; Arnaud and Beurois, 1996: 68; Schmid and Giret, 1998: 185). In 2002, more than 70 years after the factory had closed, I met three French biologists who were camped in a restored wooden building belonging to the original factory. They were studying the local population of another introduced animal, the cat. The hills rising up behind the factory were covered with Kerguelen tea (*Acaena magellanica*, a plant apparently less

palatable to rabbits). Rabbit droppings were everywhere, and there was no Kerguelen cabbage to be seen.

Like other subantarctic islands, Îles Kerguelen is marginal for human survival. A small base was established there in 1951 for meteorological and scientific researchers. It relies on ships to bring food and drink, though its inhabitants hunt the naturalised goats and reindeer for sport and meat. Beef comes by ship from another French subantarctic possession in the Indian Ocean (Île Amsterdam) where cattle are naturalised. Groceries and bottled water are imported — despite a superabundance of pure fresh drinking water — and the greenhouses grow lettuces, sorrel, mint, tomatoes, spring onions, and beetroot (Fig 4). Outside the greenhouses dandelions, once unknown, flourish.

Wrecks, graves and debris

When I visited Îles Kerguelen aboard the *Akademik Shokalskiy* its vast bay, the Golfe du Morbihan, was as calm as a millpond. The day before, winds were so high that our 2000-tonne ship had dragged its anchor. Winds like these have led to shipwrecks around almost all subantarctic islands, further evidence of past human presence on these islands. Some of the wrecks pre-date our knowledge of an island's existence — the captain of a ship visiting Macquarie Island in 1810 (the year of its discovery) reported seeing the wreckage of a ship there (McNab 1907 119–20).

There are also graves. Îles Kerguelen's small island cemetery on Île du Cimetière (Cemetery Island) holds the grave of a ten-year-old boy. Elsewhere on the island is the grave of a sailor who died during World War II when German raider ships sheltered there. When HMAS *Australia* found evidence of the German visit, her crew laid magnetic mines on the north and east coasts of the island. On subantarctic Auckland Island, another German ship the *Erlangen* sheltered for more than a month at the outbreak of World War II. Its crew cleared five acres (2 hectares) of forest and loaded 250 tons of wood on board for fuel (Eden, 1955: 3; Kerr, 1976: 97; Dingwall, 1986: np.). In the 1890s, sealers on Macquarie Island killed king penguins for oil ('bird oil') as well as taking elephant seals. They also harvested an estimated 2 million royal penguins (which breed on the island) and collected penguin eggs for food. On a visit there in 2004, I saw the graves of two sealers. One grave belonged to the head of a sealing gang, Otto Bauer — 'a big burly fellow, with an immense beard' (Belgrave Ninnis diary: 12 December 1911) — who died in 1918, and after whom Bauer Bay on the island's west coast is named.

Apart from leaving their names and earthly remains on the islands, there were other effects when people came. Both accidentally and deliberately, people on subantarctic islands set fire to the vegetation. On Auckland Island a small British colony for commercial whaling was established in 1849. "A large tract of country to the S.W. of our position is now in flames", wrote assistant commissioner William Mackworth in 1851. "The whole settlement is alarmed — the progress of the fire will be constantly watched throughout the night" (22 October 1851, quoted in Dingwall et al, 1999: 91). When the 888 ton *Invercauld* was wrecked on the main island's west coast, the survivors made fires, a necessity in the climate. One burned so deeply into the peat that "it could not go out" (Eunson, 1974: 76–117; Allen, 1999: 150). Plants like the subantarctic tussock grasses were killed by fires like this.

Elephant sealers left piles of carcasses on the beaches where they worked. After killing the beasts, they took only the fat layer (or 'blubber'), which was chopped or minced and then boiled down in large cast iron try pots or in steam digesters. "It frequently happens that the number of seals killed in one knockdown is so great that many of them are never even skinned," wrote the biologist RAA Sherrin in 1886, "but suffered to pass into a state of putrefaction" (Sherrin, 1886: 234). When the British oceanographic expedition *Challenger* arrived at Heard Island in 1874, naturalist Henry Nottidge Moseley found a landscape strewn with the skeletons of thousands of elephant seals. "The bones lay in curved lines, looking like tide lines ... marking the rookeries of old times and tracks of slaughter of the sealers," he wrote (Moseley, 1879: 222).

At a certain stage, wastes become either cultural heritage or undesirable. On Heard Island in 1951 the men of the Australian expedition tried out a new idea — “to accumulate one week’s rubbish in the trailer and dump it at a greater distance from the camp in a lagoon”. Today the litter from Australian expeditions is returned to Australia. In the year 2000, workers on Heard Island packed and returned to Australia an estimated 25 tonnes of rubbish, much of it produced by dismantling old station buildings. Where the base’s old powerhouse and fuel dump once were, some of the cove’s soil and sand had higher levels of pollutants from old fuel than the prescribed limits for contaminated urban sites (Stark, 2004: 20). There are no roads, tracks, or harbours on Heard Island, nor tourist facilities of any kind. Unfortunately, there are other, inexhaustible, sources of rubbish. Remote as Heard Island is, it is not beyond the reach of marine debris. The waves which fetch up on one subantarctic island after another bring the same sort of water-borne debris to them all. Seabirds that nest on Heard Island ingest small particles of plastic in their food. One Australian volunteer checked four of the island’s beaches in the summer of 2000–01, walking each beach every day for four months. In those four months he collected an estimated tonne and a half of garbage (later repatriated), almost all of it plastic.⁷

The remains of farming and of other contacts

On subantarctic islands there are remains of buildings which have long outlasted their occupants. These include the stone remains of sealers huts on Heard Island. On Auckland Island the British colony established at the end of 1849 was short-lived, lasting less than three years. Most of the evidence of its presence disappeared quickly after the buildings were dismantled and removed in 1852. A survivor from the wreck of the *Grafton* in 1864 (and doubtless a very keen searcher for edible vegetables) quoted in McLaren (1948: 81) wrote:

Traces of brush fences point out where innumerable small vegetable gardens have been; but the ground everywhere, except where some of the houses have apparently stood, is choked up with a vigorous growth of a long thick grass, and there is not the slightest sign of an edible vegetable.

By 1890, it was reported that all that remained of the British colony was a piece of country which looked as if it had been cleared (Chapman, 1890: 499). But not every trace is gone. In 1996, I walked under trees curving over a track made 145 years earlier, which was still distinct enough to follow.

Whether profitable or not, farming and fencing the land are statements of possession, and of our intent to tame unused country. In the late 19th Century the New Zealand government auctioned grazing leases for the Auckland and Campbell Islands, advertising this unfarmable land as viable farmlands of high, broken country. Farmer James Gordon, whose initial inquiry had prompted the auction in 1894, became the successful bidder for mountainous Campbell Island, advertised as a 28,000 acre (11,300 ha) pastoral run. The sheep he took there were to be farmed for their wool, not simply released to sustain shipwreck victims. By March 1900 Gordon had sold the lease to Captain William Tucker, an experienced sheep farmer, who sailed for Campbell Island in January 1901 with a flock of a thousand sheep.

New Zealand botanist Leonard Cockayne visited the island in 1903 — some seven or eight years after the introduction of sheep — and compared the island’s vegetation before grazing with what he now saw. He had no doubt that overgrazing by sheep was responsible for ‘this retarded regeneration, and for the erosion scars which are beginning to pock-mark the landscape’ (recorded in Sorensen, 1954: 18).⁸ The people who tended these sheep on Campbell Island a hundred years ago saw signs of earlier human presence — a sod hut, traces of an 1874 French transit of Venus expedition, the ruins of an old whaling-station and jetty, and populations of rats. For a few years they also hunted whales and seals (the latter at times illegally), but the distance from wool markets, the marginal ability to pasture animals on the island’s sodden peaty soils in abidingly cold wet windy weather, and the Great Depression which began in 1929, combined to render the Campbell Island venture uneconomic. In August 1931 the steamer *Tamatea* took four shepherds, 114 bales of wool and sheepskins, and 100 seal skins from Campbell Island to Bluff. It was end of sheep-farming there. About 4000 sheep and a few cattle were left on the island. The sheep survived wild on Campbell Island

until their removal in the 1980s. Like the black rat (naturalised on Macquarie Island, the southernmost limit for *Rattus rattus*) and the Norway or brown rat (*R. norvegicus*), they proved better than humans at making the subantarctic their home (Shaw et al, 2005: 119). Rats eat the shoots and leaves of the tussock grasses that are so characteristic of subantarctic islands, and live in the substantial sheltering bulk of these tussocks.

The overharvesting of native animals, together with the introduction of species which might later become pests, forms one of the most significant legacies of human contact with subantarctic islands, their cultural heritage. Naturalist, farmer and polemicist Guthrie-Smith summed up the pattern in *Sorrows and joys of a New Zealand naturalist* (1936: 25) when he wrote:

It is perhaps not to be wondered at that pig, goats and rabbits ... should have been landed as emergency rations for storm-stayed or shipwrecked sailor folk. To this day on these islands the descendants of animals thus liberated remain as durable a monument to the sealing fraternity as black rats to the British Navy

Conclusion

By the end of the 20th Century, the only islands in this paper not listed yet as UNESCO World Heritage were Îles Kerguelen and Île Saint-Paul. Heard, McDonald and Macquarie Islands were listed in 1997, Heard and McDonald Islands for their outstanding beauty, biological and geological history, and freedom from introduced plant or animal species, Macquarie Island (a rare example of deep oceanic crust now above the sea's surface) for its outstanding geological significance. In 1998, all of New Zealand's subantarctic islands — Auckland, Campbell, Antipodes and Bounty Islands and The Snares — were listed in a group as World Heritage. Parts of Îles Kerguelen have been French national park since 1924 (and Îles Amsterdam and Crozet since 1938).

A substantial part of the record of human contact with the subantarctic region resides in the land, plants and animals of the islands themselves. Just as happens elsewhere on the globe, biology and landscape make more sense when a place's history is known. In the case of subantarctic islands, this history consists largely of the removal by harvesting or hunting of native animals, the introduction of foreign animal and plant species to the islands, increased erosion and fire consequent on human visits and on these introductions, a scattering of buildings (which are now sometimes heritage-rated remains), and a modern stream of seaborne detritus from fishing vessels, other ships, and settlements elsewhere on the globe. The ecological changes made by humans, the debris, the remains of the buildings all testify to a tangible human history shared by many of the subantarctic islands. They are what constitutes the subantarctic's cultural history.

Endnotes

¹ These include Allen (1997), de la Rue (1930), Bailey and Sorensen (1962), Bennett (1971), Lancaster Brown (1957), Busch (1980), Dingwall and Gregory (eds) (2004), Dingwall et al (1999), Judd (ed) (2000), Kauffmann (2000), Kerr (1976), Kerr and Judd (eds) (1978), Lutwyche (1854), McLaren (1948), M'Cosh (1835), Migot (1957), Schmid and Giret (1998), Smith (1986), Taylor (1929), Temple (1966), Turbott (2002) and van Cleef (2004).

² Kendall's 'Beyond Kerguelen' (*Sydney Mail* 19 June 1880; Kendall, 1966 150) and Porter's *Return to Kerguelen* from the limited edition book of the same name (Porter, 2001: unpaginated). Though the island's name is the title of Kendall's poem, the island is not its subject. Kendall uses the island as a point beyond which the subject of the poem, Antarctica, lies.

³ They might have been *Arctocephalus tropicalis*, *A. gazella*, *A. forsteri*, or a now-extinct species (Goldsworthy et al, 1998: 68)

⁴ The 'mollymawks' (spelt variously) are the smaller albatrosses, but Corbet used the name for the skua *Catharacta antarctica*.

⁵ The rabbits, long thought to be from a French breed, were possibly descendants of the British Silver Grey breed (source www.rarebreeds.co.nz/enderbyrabbit.html accessed 8 March 2005).

⁶ The Erivan sank on a rock near Terror reef, and the Lozère on a reef near Passage de la Gazelle (Aubert de la Rue, 1930: 107–12).

⁷ Stu Fitch, pers comm 4 May 2005.

⁸ Cockayne was 'the most prolific recorder of New Zealand botany' (Thomson 2003).

Bibliography

Allen, M (1997) *Wake of the Invercauld: Shipwrecked in the Subantarctic*, Auckland: Exisle Publishing

Anon (1903) 'The Voyage of the "Gauss" from Cape Town to Kerguelen' *Geographical Journal* v21n1 January: 39–42

Arnaud, P and Beurois, J (1996) *Les Armateurs du Rêve: Les Concessions Bossière et les sociétés Françaises d'Exploitation des Îles Australes de l'Océan (1893–1939)* [The Shipowners of the Dream: The Bossière's Leases and the Exploitations of the French Companies in the Southern Indian Ocean (1893–1939)], Marseille: Mme F Jambois

Alfred M Bailey and JH Sorensen (1962) 'Subantarctic Campbell Island', Denver: Denver Museum of Natural History Proceedings no 10

Bajard, P (1964) 'Données sur la Biologie et l'Exploitation Industrielle des Éléphants de Mer aux Kerguelen' *CNFRA Biologie* v1n5: 109–31

Busch, B.C (1980) *Master of Desolation: the reminiscences of Captain Joseph J Fuller*, Mystic: Mystic Seaport Museum

Bennett, I (1971) *Shores of Macquarie Island*, Adelaide: Rigby Ltd

Chapman, F (1890) 'The Outlying Islands South of New Zealand', *Transactions of the New Zealand Institute* n23: 491–522

Coman, B (1999) *Tooth and Nail: The Story of the Rabbit in Australia*, Melbourne: Text Publishing

Corbet, C (1875) "*Venus*" at the Isle of Desolation: My Private Journal During the "Transit of Venus" Expedition of 1874, Southampton: Alfred Randle

Dawson, E (2006) 'Fiction is Stranger than Truth: Tales of the Auckland Islands as a Literary Stimulus', paper delivered at Auckland Islands bicentennial meeting 18 August 2006, Wellington, source www.rsnz.org/events/aki-isl/profiles.php accessed 27 November 2007

de la Rue, Edgar Aubert (1930) *Terres françaises inconnues: l'archipel des Kerguelen et les possessions françaises australis*, Paris: Société Parisienne d'Édition

Dingwall, P (1986) 'Wartime Refuge at the Auckland Islands' *Antarctic* (bulletin of the New Zealand Antarctic Society) v11n1: unpaginated reprint

Dingwall, P, Fraser, C, Gregory, J and Robertson, C (1999) *Enderby Settlement Diaries: Records of a British Colony at the Auckland Islands 1849–1952*, Wellington: Wordsell Press

Drygalski, E von (1904) 'The German Antarctic Expedition', *Geographical Journal* v24n2: 129–48.

Eden, Allan W (1955) *Islands of despair: being an account of a survey expedition to the sub-antarctic islands of New Zealand*, London: Andrew Melrose

Elliot, G (2001) 'The Archaeology of Early 20th Century Whaling Stations', paper delivered at the Newfoundland Northern Peninsula Heritage Society conference, 22 September 2001

Eunson, K (1974) *The Wreck of the General Grant*, Wellington: AH and AW Reed

- Everett, H (2007) 'Reflections on the 3rd International Small Island Cultures Conference June 29-July 2, 2007 University of Prince Edward Island', source www.upei.ca/iis/files/iis/SICRI-Holly-Everett-Reflections.pdf
- Fletcher, H (1984) *Antarctic Days with Mawson: A Personal Account of the British, Australian and New Zealand Antarctic Research Expedition of 1929–31* London: Angus and Robertson
- Floch, D (1982) *Les oubliés de l'île St Paul*, Rennes: Ouest France
- Goldsworthy, S, Wynen, L, Robinson, S and Shaughnessy, P (1998) 'The Population Status and Hybridisation of Three Sympatric Fur Seals at Macquarie Island', *New Zealand Natural Sciences* n23 (suppl): 68 (abstract)
- Guthrie-Smith, H (1936) *Sorrows and Joys of a New Zealand Naturalist*, Dunedin: AH & AW Reed
- Hince, B (2005) 'The Teeth of the Wind: An Environmental History of Subantarctic Islands', PhD thesis, Centre for Resource and Environmental Studies, Australian National University, Canberra
- Judd, N, ed (2000) *Marlborough whalers at Campbell Island 1909–1916: recollections of J Timms*, Wellington: Department of Lands and Survey (2nd printing)
- Kauffmann, J-P (trans Patricia Clancy) (2000) *The arch of Kerguelen: voyage to the Islands of desolation*, New York: Four Walls Eight Windows
- Kerr, I (1976) *Campbell Island: A History*, Wellington: AH and AW Reed
- IS Kerr and N Judd, eds (1978) *Marlborough whalers at Campbell Island 1909–1916*, Department of Lands and Survey, Wellington
- Lancaster Brown (1957) *Twelve came back*, Hale, London; Briton Cooper Busch (1980)
- Lazer, E (2006) 'Antarctic and Sub-Antarctic Cultural Heritage. Commentary prepared for the 2006 Australian State of the Environment Committee', source: www.environment.gov.au/soe/2006/publications/commentaries/antarctic-heritage/sub-antarctic.html#summary.
- Lutwyche, A (1854) *A narrative of the wreck of the Meridian, on the island of Amsterdam*, Sydney: Waugh and Cox
- McLaren, F (1948) *The Auckland Islands: Their Eventful History*, Wellington: AH and AW Reed
- M'Cosh, J (1835) *Narrative of the wreck of the Lady Munro, on the desolate island of Amsterdam, October, MDCCCXXXIII*, Glasgow: W Bennet, Free Press Office
- Migot, A (trans Graves, R) (1957) *The lonely South*, Rupert Hart-Davis, London
- Moseley, H (1879) *Notes by a Naturalist on the "Challenger" Being An Account of Various Observations Made During the Voyage of HMS "Challenger" Round the World, in the Years 1872–76*, London: Macmillan
- Ninnis, B, Diary, (SPRI ms 1618, photocopy), Cambridge: Scott Polar Research Institute library,
- Porter, P (2001) *Return to Kerguelen*, Sydney: Vagabond Press
- Prickett, N (2006) 'Sealing in the Auckland Islands', paper delivered at Auckland Islands bicentennial meeting 18 August 2006, Wellington. Royal Society of New Zealand website www.rsnz.org/events/akl-isl/profiles.php
- Rare Breeds Conservation Society of New Zealand (c2000) 'Auckland Island pigs rescue: a Rare Breeds Society project', Rare Breeds Society website www.rarebreeds.co.nz/Aucklandpigspro.html
- Reed, T (ed) (1966) *The Poetical Works of Henry Kendall*, Adelaide: Libraries Board of South Australia
- Schmid, M and Giret, A (1998) *Kerguelen*, Winterthur: Birkenhalde Verlag
- Shaw, J, Hovenden, M and Bergstrom, D (2005) 'The Impact of Introduced Ship Rats (*Rattus rattus*) on Seedling Recruitment and Distribution of a Subantarctic Megaherb (*Pleurophyllum hookeri*)' *Austral Ecology* n30: 118–25

- Sherrin, R (1886) *Handbook of the Fishes of New Zealand*, Auckland: Wilsons and Horton
- Smith, J (1986) 'Specks in the Southern Ocean', Department of Geography and Planning, Armidale: University of New England
- Sorensen, J (1954) 'Ecology of the Subantarctic Islands: Botanical Factors' *New Zealand Ecological Society Proceedings* n3: 17–18
- Stark, S (2004) 'Contamination at Atlas Cove Station' *Australian Antarctic Magazine* n7: 20
- Taylor, N.W (1929) *Life on a whaler, or Antarctic adventures in the Isle of Desolation 1858*: New London: New London County Historical Society
- Temple, P (1966) *The sea and the snow: the south Indian Ocean expedition to Heard Island*, Melbourne: Cassell
- Thomson, A (2003) 'Leonard Cockayne - 1855–1934 Dictionary of New Zealand Biography' (updated 16 December 2003) www.dnzb.govt.nz/
- Torr, N (2002) 'Eradication of Rabbits and Mice from Subantarctic Enderby and Rose Islands', in Veitch, C.R and Clout, M.N (eds) 'Turning the tide: the eradication of invasive species', Gland: IUCN SSC Invasive Species Specialist Group: 319–28
- Turbott, G (2002) *Year away: wartime coastwatching on the Auckland Islands, 1944*, Wellington: Department of Conservation
- van Cleef, A (trans Leinbach, SJ) (2004) *The lost island: alone among the fruitful and multiplying*, New York: Metropolitan Books,
- Worster, D (1990) 'Transformation of the Earth: Towards an Agroecological Perspective in History', *Journal of American History* v76n4: 1087–1106