terms with the issues and the procedures underpinning costing universal services in a competitive telecommunications environment.

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Ecology and Empire: Environmental History of Settler Societies

Tom Griffiths & Libby Robin (Eds)

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Titles of books have to both indicate the topic and entice the reader. *Ecology and Empire* certainly enticed me and I had even hoped, but been unable, to attend the 1996 conference in London at which the papers in this volume were first presented. Tom Griffiths and Libby Robin, then at the Sir Robert Menzies Centre for Australian Studies (part of the Institute for Commonwealth Studies in the University of London), organised the conference which attracted a notable array of people working in environmental history and related fields to discuss the issues of the title in relation to settler societies generally and Australia in particular. The setting, in the very core of the old British Empire, and the topic seemed particularly appropriate given current alarms about the transformation of the global environment and the attempts to find sustainable modes for future development. The rising field of environmental history offers one of the paths towards some understanding of the complex and changing relationships between the human and non-human societies involved, an understanding which is sorely needed if the rhetoric of sustainability is to be translated into effective policies.

The topic flows from the confluence of four streams of ideas and scholarship which until comparatively recently have been considered separately. First in the title, ecology, springs from science and initially, as Robin points out in her chapter, from botany with the British Ecological Society being formed in 1913. Now it takes a systems approach being concerned with the flows of energy, water and nutrients and the interdependencies of species. Its scale has expanded from its early concerns with detailed studies of particular sites to broader studies of regions or even of the globe in Lovelock's romanticised 'Gaia hypothesis'[1] or in recent forecasts of the effects of climate change on ecosystem boundaries and species survival. Second in the title, empire, springs originally from political science and political economy over much the same period (see Brewer[2] for a masterly overview), but the cultural dimensions are receiving much greater attention in the current resurgence of interest in the imperial experience (e.g., Keay[3]; James[4]). In this, Edward Said's stimulating *Culture and Imperialism*[5] emphasises that imperialism has to be understood in terms of the 'overlapping territories, intertwined histories' of colonisers and colonised. Inexplicably, this work seems to have been missed by the authors in *Ecology and Empire*, although Said's earlier *Orientalism* is mentioned.

The two streams of the sub-title are no less difficult. Environmental history is an emerging but uneasy field which essays to study the relationships between human and non-human societies. Although a glance at the bibliography in *Ecology and Empire* shows it to be flourishing in Australia, the considerable difficulties of studying across the disciplines of life and social sciences and of history are almost always present; *Ecology and Empire* is no exception, as discussed later. The fourth stream of settler societies carries its load of literature for each such country—Australia, South Africa, the US and Mexico—

are discussed but, apart from Fitzpatrick's[6] pioneering studies of Australia and Denoon's *Settler Capitalism*,[7] their general nature appears to be remarkably under-theorised. This is critical because the history of the 'countries of demographic take-over' like Australia is markedly different from those such as India or large areas of Africa which are the central focus of most studies of imperialism. Settler countries had to make only polite requests to gain some independence from the imperial power and have no fierce history of independence struggles and imperial suppression. The Australian settlers remained—with minor exceptions—loyal to their Empire 'home', even seeing Gallipoli as a hallmark of national identity, and felt that they had more in common culturally with the imperialists than with the indigenes. Perhaps all the present difficulties of reconciliation, native title to land and multi-culturalism can be viewed as some sort of long-delayed symptom of an incomplete de-colonisation.

The topic of ecology and empire has already attracted some major scholarly studies of which Alfred Crosby's *Ecological Imperialism*, John MacKenzie's *The Empire of Nature* and Richard Groves *Green Imperialism* are the best known. Both MacKenzie and Grove contribute chapters to this volume while Crosby's views are frequently cited and provide Griffiths with the start for his introduction. But how useful is this? Crosby's account of the introductions and invasions of innumerable exotic plants, animals, pests, weeds and diseases into the colonial world in order to create 'neo-Europes' in countries like Australia is a lively one, but it is not one of imperialism—except metaphorically in its title and incidentally in practice. Moreover, it fails to recognise that ecological histories are as 'intertwined' as others, as MacKenzie notes surely in his chapter. Michael Williams, in his chapter, takes a more generous view, akin to Griffiths, and credits Crosby as opening environmental history to global scales.

No collection of conference papers could be expected to deal with the complexities of the topic of ecology and empire in a comprehensive manner, rather it should be expected to provide a selection of notable papers which illuminate aspects of the theme. They should not only entice and stimulate the reader, but provide materials from which more comprehensive studies can draw later. In this light, *Ecology and Empire* fulfils any reasonable expectations as it contains several excellent and original papers, not all of which can be mentioned here. The book is arranged in five parts. The first includes papers by Stephen Pyne and Tim Flannery which provide useful introductions for those not familiar with their longer published works. The second part is concerned with science. J.M. Powell, more than any other author in this collection, engages the issues of the environmental history of settler societies in an imperial framework in his study of water management in Australia. He emphasises the 'vernacular' endeavours of colonial science and technology and the interchanges with other settler societies, especially those within the empire. While investment, defence, and many cultural and scientific institutions were clearly aligned to the British core, Powell notes how Australian forest and water management bore 'traces'—I would have put it stronger—of that in India, land degradation of that in South Africa and land administration of that in Ireland. Robin makes a carefully documented case and claims that in focusing on the 'species of invasion' Australian ecology is 'still, in a sense, a science of empire'. However, a more intertwined reading is possible from the evidence: for example, Ratcliffe's classic study of flying foxes is as much one of the indigenous fauna as it is of their depredations on the settlers' orchards.

Two of the papers in the third part are concerned with South Africa. Richard Grove provides a scholarly study of the 19th century Scottish minister, John Croumbie Brown, who wrote, as Grove puts it, 'the tablets of a covenant of environmentalism deeply inspired by a resurgent Scottish and religious identity'. One strand of such

environmentalism was to influence the national parks movement whose South African expression is recounted in an excellent paper by Jane Carruthers. In detailing the history of three national parks, she reveals the changing and competing pressures of preservation and use, whether by game hunting, tourism or local community use. At the end of her paper, she reflects on the function of national parks in the post-apartheid era and raises the question of whether international initiatives to create biosphere reserves and world heritage areas—in which I believe more than a whiff of Brownian environmental evangelism still wafts—might create a new kind of imperialism. This, to me, directly engages the topic of the conference. There are another eight papers which I have no space to mention here, except for MacKenzie's paper in the fifth part which categorises the historiography of writing to date on the imperial environment.

How well then does *Ecology and Empire* meet reasonable expectations of such a collection and what is its place in environmental history? Three points should be made. First, there are enough good papers and new material to justify the publication: I have already mentioned the overviews by Flannery and Payne and the papers by Carruthers, Grove, Powell and Robin. Two scholarly papers on South African pastoral production by William Beinart and Shaun Milton should also be noted here. Second, the collection, prepared mostly by historians, reflects what is probably the majority trend to write what I call 'environmental history without the environment'. That is to say it focuses on what happened in the human communities without giving equal weight to what actually happened in detail to the non-human communities. Third, the theme of empire and the place of settler societies is only engaged directly by Powell and Carruthers which indicates to me that it is likely to be a fruitful field for further work. Overall, I found *Ecology and Empire* to be a useful addition in an emerging field.

Notes and References

1. J.E Lovelock, *Gaia: A New Look At Life On Earth*, Oxford University Press, Oxford, 1979.
2. A. Brewer, *Marxist Theories of Imperialism: A Critical Survey* (Routledge & Kegan Paul, London, 1980.
3. J. Keay, *The Last Post: The End of Empire and the Far East* John Murray, London, 1997.
4. L. James, *The Rise and Fall of the British Empire*, Little Brown, London, 1994.
5. E.W. Said, *Culture and Imperialism*, Vintage, London, 1994 [first published Chatto & Windus, 1993].
6. See B. Fitzpatrick, *British Empire in Australia: An Economic History, 1834–1939* Melbourne University Press, Melbourne, 1941; and, B. Fitzpatrick, *British Imperialism in Australia, 1783–1833* Allen & Unwin, London, 1925.
7. D. Denoon, *Settler Capitalism: The Dynamics of Dependent Development in the Southern Hemisphere*, Oxford University Press, Oxford, 1983.

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On the Reliability of Economic Models

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The essays in this wide-ranging volume are written by philosophers, with commentary by economists. The purpose, Little tells us, 'is very specific: to stimulate a discussion of the epistemology and methodology of economics that works at the level of detail of existing