**Ecology and Empire: Environmental History of Settler Societies.** Tom Griffiths and Libby Robin. University of Washington Press, Seattle. 1998. Pp. 256. $22.00 (paper). ISBN 0-295-97667-5.

The field of environmental history, concerned broadly with the complex relationship between people and nature through time, has emerged since the early 1970s to become a popular arena of scholarship. Although in its early days environmental history tended to focus on the political history of the conservation movement in the United States, it has since become a powerful interdisciplinary tool used to understand humanity's impact on the earth. The frame of reference in environmental history has widened to cover diverse topics, from the perceptions of urban pollution and environmental racism to the demographic and ecological effects of colonialism. *Ecology and Empire* is a significant and timely contribution to the blossoming literature in environmental history. In general, it is about the relationship between human and natural history over the past five centuries. In particular, it assesses the environmental fallout of European imperialism from the perspective of settler societies, or the colonized peripheries. The principal European player in this tale is Great Britain, and the main settler society is Australia.

After a brief introduction by Tom Griffiths, who co-edits this volume with Libby Robin, *Ecology and Empire* is organized into five parts. Part 1, "Ecologies of Invasion," begins with a chapter by Stephen Pyne about the history of fire in Europe and the subsequent spread of European fire philosophy throughout the world. Pyne points out rather convincingly that Europeans saw very little difference between controlling fires and controlling people. They used fire suppression as a powerful administrative tool to incorporate lands and people into their domain. Pyne's contribution is followed by a chapter written by Eric Rolls, who outlines how ecological invasions and an inadequate understanding of local environmental conditions by the British had devastating consequences for Australia. The third and final chapter in Part 1 is by Timothy Flannery, who examines the destiny of British settlements in Australia. He ties their fate directly to the ecology of the land in which they settle.

Part 2 of *Ecology and Empire* is called "The Empire of Science." Its four chapters examine the tensions between science introduced from the core (Europe) to the periphery (settler societies). Libby Robin discusses ecology not just as a way of describing the natural world, but also as a philosophy and ideology. Ecological research in Australia, as influenced by the British, became a vehicle to make exotic biota economically useful at the expense of understanding indigenous species regardless of their economic and ecological value. Thomas Dunlap follows Robin's piece by outlining the development of ecological concepts in the United States and Great Britain and their transmission to scientists in Australia and New Zealand. William Beinart then takes the reader to South Africa by chronicling the critique of transhumant pastoral practices in the Cape by colonial veterinarians, who promoted investment in sedentary stock raising as a way to bring animal diseases under control. Beinart's case study draws attention to the frequent conflict between those steeped in traditional scientific training and those instilled with intimate knowledge of local environments. The last chapter in Part 2 is by J.M. Powell, who provides a detailed history of water management in Australia, par-

ticularly Victoria, to reveal how the importance of domestic technology has been underestimated in efforts to provide Australians with adequate water supplies.

Part 3, "Nature and Nation," begins with a chapter by Jane Carruthers, who takes us back to South Africa. She examines the imperial dynamic behind the creation of Kruger National Park, Dongola Wildlife Sanctuary, and Pilanesberg National Park. Carruthers shows quite effectively how protected areas can mitigate against, rather than promote, national unity because they are saved **for** people by protecting them **from** people. In the following chapter Richard Grove traces the roots of settler environmentalism in South Africa. Criticism of the environmental impact of British colonialism was primarily a Scottish phenomenon. South Africa's most vocal critic was the Reverend John Croumbie Brown, a Scotsman employed by the Cape Colony in the 1860s to advise on the biological aspects of settlement. The final chapter in Part 3, written by Brigid Hains, is an engaging account of the life of John Flynn, the Australian missionary who created the Flying Doctor Service to serve populations in the remote and inhospitable interior. Hains draws parallels between the life of Flynn and the life of Douglas Mawson, an icon of resourcefulness in Australia for his successful expeditions to Antarctica nearly ninety years ago. Flynn and Mawson subscribed dearly to the values of progressive conservationism, both in their encounters with ecological frontiers and in their visions of defining the relationship between settlers and nature.

Part 4 is called "Economy and Ecology." It contains three chapters, the first by Michael Williams. He compares deforestation in Australia with deforestation in the United States, New Zealand, India, China, and Japan. In all cases, perhaps with the exception of Japan, deforestation has been the most blatant manifestation of ecological imperialism, a term used by Williams in reference to environmental change as a result of the penetration and/or conquest of one group by another. In the following chapter Elinor Melville shifts the stage to Latin America, where she assesses the rise of capitalism and the associated environmental impacts from 1519 to 1810. Melville argues that the capitalist mode of production cannot be used to explain environmental change in Latin America until the nineteenth century, prior to which there was no clear-cut global division of labor. The global system of exchange was rather characterized by inter-oceanic trade controlled by Europeans **and** local trade carried out within and between independent producing regions controlled by indigenous traders, Europeans born in the Americas, and immigrant Spaniards who married locally. Shaun Milton concludes Part 4 with a chapter about the beef frontier in South Africa's Transvaal. State intervention in traditional pastoral strategies created a racially demarcated landscape and did little to promote a commercially viable and environmentally sustainable cattle industry. Milton's chapter, like the two others in Part 4, illustrates how invading market economies and the assertion of colonial authority confront and interact with indigenous or settler livelihoods.

The fifth and final part of *Ecology and Empire* is called "Comparing Settler Societies." It contains two chapters that claim to provide broad historiographical perspectives of material presented in this book. John MacKenzie discusses four tendencies of imperial environmental history: 1) an apocalyptic model fueled by green histories; 2) the neo-Whiggish framework, which is a postmodern antidote to the apocalyptic model; 3) the longer perspective, which evaluates not only local resistance to colonial policy but also indigenous submission and collaboration;

and 4) the fully integrated cultural school, which attempts to place environmental issues into their full socioeconomic, political, and cultural context. The last chapter of *Ecology and Empire* is written by David Lowenthal. He unpacks six interrelated themes in the book by arguing that we need to appreciate: 1) variation when writing imperial environmental history; 2) diverse perceptions about frontiers and peripheries; 3) the multi-faceted dimensions of environmentalism; 4) the swiftness of ecological change brought about by settler societies; 5) the environmental consequences of indigenous livelihoods; and 6) the unavoidability but frequent desirability of biological invasions, as both nature and culture can benefit from intermingling.

Most of the chapters in *Ecology and Empire* are thoughtful and thoroughly researched. Of particular note is the contribution by Melville, which is clearly written, exposes the simplistic seduction of dependency models, and adds immensely to our scarce knowledge of environmental history in Latin America. Melville, however, takes the reader to 1810, when Spanish colonies in the New World began to gain independence. An interesting extension of her work would involve a (post)colonial analysis of the livestock industry in the Southern Cone, in which the British played an extremely influential role. It would have been most welcome in this book given its focus on British imperialism, which incidentally could have been suggested in the title. One exception to a set of otherwise solid contributions is the chapter by Flannery. He casts his comments about Australia's evolutionary and cultural history in terms of environmental determinism, even suggesting that "... without a detailed understanding of the environmental determinants of life, the significance of human cultures must remain obscure" (p. 49).

While *Ecology and Empire* is generally strong in content, it is plagued by organizational deficiencies. The structure of the book is not clearly presented in Griffiths' introduction, nor does Lowenthal's last chapter bring about effective closure. Strong introductory and concluding chapters by the co-editors would provide this volume with much needed cohesiveness, as would cross-referencing among its authors. Few passages in the book lead the reader to believe that the contributors evaluated one another's work as they prepared and revised their manuscripts. *Ecology and Empire* also lacks sufficient tables and illustrations. For example, the first table does not appear until Chapter 11 even though many chapters contain data suitable for tabular presentation, and maps are largely, although not entirely, absent from this book. Many of the authors, while thoroughly addressing the temporal dimension of the material they present, have neglected to convey its spatial dimension adequately. The absence of cohesiveness and largely aspatial perspective in *Ecology and Empire* detracts from what would otherwise be an exceptionally strong book. Nevertheless, despite the shortcomings outlined above, this book is worthy of reading lists for courses dealing with the history of European imperialism, and it would make a useful addition to the personal library of anyone interested in the burgeoning field of environmental history.

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