

the volume as a starting point in ‘filling the silences’. Without question, *The Heather and the Fern* helped consolidate growing scholarly interest in New Zealand’s Scots. If *Far from Home* prompts deeper investigation of New Zealand’s English migrants Lyndon Fraser and Angela McCarthy will have rendered New Zealand scholarship and a wider reading public signal service.

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Mad on Radium: New Zealand in the Atomic Age. By Rebecca Priestley. Auckland University Press, Auckland, 2012. xii + 284pp. NZ price: \$45. ISBN: 978 1 86940 727 8.

MAD ON RADIUM deals with the atomic or nuclear aspects of New Zealand’s history over the last 120 years. The subjects covered by Priestley range from the use of radioactive material in medicine to the involvement of New Zealand scientists in the development of the atomic bomb and the anti-nuclear movement which came to the fore in the 1980s. A book dealing with such a wide range of matters could easily lack cohesion, but Priestley skilfully uses both thematic and narrative approaches to produce a substantial and engaging book. *Mad on Radium*, in many respects, complements Malcolm Templeton’s 2006 book *Standing Upright Here: New Zealand in the Nuclear Age 1945–1990*, which examines nuclear issues in New Zealand’s foreign policy.

The first chapter of the book discusses the alacrity with which New Zealanders embraced the discovery of radioactivity and related advances. This enthusiasm is reflected in the book’s title and comes from a comment in 1914 by the government’s expert on the therapeutic use of mineral waters that the ‘public are mad on radium’. During the early years of the twentieth century treatments such as soaking in hot radioactive baths and drinking radioactive water were widely popular. The persistence of a belief in the health-giving powers of radiation among some New Zealanders is one of the more startling findings set out in this work. Priestley’s account of the rapid adoption of x-ray technology in New Zealand during the decades before the First World War is thought-provoking and certainly points to the need for more study of the adoption of new technologies in New Zealand during this period.

A wide range of consumer products and services made use of radioactive material or x-ray technology. Particularly disturbing was the employment of special x-ray machines or ‘pedascopes’ in shoe shops to assist with the fitting of new shoes. These devices were common across New Zealand during the 1940s and 1950s, and it was only in 1969 that the last pedoscope was withdrawn from service. Priestley also notes how references to radiation were for many years used by advertisers to suggest that their products were new, powerful and generally more desirable.

Central to the book are the chapters that focus on the ‘dawn of the atomic age’ during the Second World War and developments during the 1950s. The part played by New Zealand scientists in the development of the atom bomb and the first British nuclear reactor has been discussed before, but Priestley’s account is typically well written and well rounded. New Zealand’s role sprang mainly from the efforts of the physicist Ernest Marsden, the long-time head of the Department of Scientific and Industrial Research. Marsden was a consummate networker and for many years a key figure in New Zealand science. He features prominently in *Mad on Radium* and is clearly worthy of a full biography. Also discussed in this part of the book are the contribution made in the post-war period to the British nuclear programme by New Zealanders, the establishment of a team to conduct atomic research at the Dominion Physical Laboratory and proposals for the construction of a research reactor in New Zealand. New Zealand’s involvement in the British nuclear

weapon tests in the central Pacific in 1957 and 1958 is well known. Perhaps less well known is the plan to produce heavy water for the British nuclear programme at the Wairakei geothermal power station. Priestley demonstrates how the nuclear weapon tests in the Pacific and related events prompted rising public concern about nuclear weapons and also charts the changing views of New Zealand politicians and scientists.

The crucial importance of Commonwealth links, both formal and informal, is evident in these chapters. It is, however, clear that although New Zealand was willing to contribute to the British nuclear programme, leaders such as Sidney Holland and Walter Nash were always guided by the pursuit of New Zealand's overall strategic, political and economic interests.

Mad on Radium includes the first comprehensive account of efforts to locate commercially viable deposits of uranium ore in New Zealand. Government-sponsored prospecting, mainly on the West Coast of the South Island during the 1950s, created considerable interest. Exploration by mineral companies continued into the 1970s. It is apparent that if a commercially viable deposit had been located New Zealand may well have become an exporter of uranium ore, like Australia and Canada. The extent of these efforts to find sources of uranium and the preparations for and serious consideration given to the development of nuclear power stations in New Zealand will come as a surprise to many readers.

Throughout the book Priestley deftly explains scientific developments in a way that the interested general reader will find easily comprehensible. This is especially evident in her chapter dealing with the growth in understanding of the dangers posed by radiation and radioactive fallout. She skilfully examines scientific, bureaucratic and political developments and charts the increasingly rigorous approach taken to regulating the use of radioactive substances and x-ray equipment.

Priestley succinctly covers the impact of the United States' 'Atoms for Peace' initiative and the development of nuclear science in New Zealand during the 1950s and 1960s. She examines, for example, the acquisition of a sub-critical nuclear reactor by the University of Canterbury in the early 1960s. Good use is made of a range of sources to illustrate how staff and students at the university viewed the reactor that was only dismantled in 1981.

The discussion in *Mad on Radium* of the birth of New Zealand's anti-nuclear policy in the 1980s and more recent events does not add anything of substance to our understanding of this period. Priestley does, however, neatly place these developments and the adoption of the nuclear-free stance as part of New Zealand's national identity in the context of the wider trends discussed in earlier chapters. The author's principal point that a commitment to being nuclear-free is a relatively recent addition to the list of attributes widely seen as New Zealand's national traits is well made.

Mad on Radium contains many useful and often quirky illustrations. The book is well designed and the glow-in-the-dark cover is particularly striking. Priestley's citation is of a high standard and the book includes a comprehensive bibliography and a well-compiled index.

The book is based on Priestley's doctoral thesis from the University of Canterbury. Unlike some books based on doctoral theses, *Mad on Radium* is a highly readable work. Priestley demonstrates a good eye for the revealing or interesting incident, such as that the first confirmed case of injury caused by x-rays in New Zealand occurred at the Thames School of Mines as early as 1905. What is especially notable is the adroit way Priestley draws together the various threads of her subject in a satisfying manner. This book will be of wide interest and points towards fruitful areas for further research.

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