

BOOK REVIEW

## **Maria Rentetzi, *Seduced by Radium: How Industry Transformed Science in the American Marketplace***

**Pittsburgh, PA: University of Pittsburgh Press, 2022. Pp. xi + 292. ISBN 978-0-8229-4706-6. \$35.00 (hardback).**

Robert Bud

The Science Museum, London

Rentetzi has written an important and interesting book whose breadth opens new vistas, but also leaves significant unanswered questions for others to address. It tells the story of radium as a commercial industry, a consumer necessity, a constructed brand and a dangerous poison in early twentieth-century America. This is a distinctively American story because in the United States, compared to many European countries, during the 1920s, the supply and use of radium were relatively unregulated commercial activities. The author, an already distinguished authority on radium history, focuses on the activities of the company at the heart of the industry from 1911 to the early 1930s. She also reflects on the consequence of the danger of such a medically validated product for the trustworthiness of medicines today. After all, readers will be familiar with public scepticism over COVID vaccines.

Rentetzi analyses the development and activities of the Standard Chemical Company, which began mining the mineral carnotite in Colorado in 1911. Arduous production was combined with remarkable marketing. To make a single gram of radium, five to six hundred tons of ore were required. Similar amounts of other chemicals were also required. Yet, at first, there was little American market to warrant such huge efforts. Much of the book is devoted to the steps to build the market and the radium brand. Indeed, perhaps the book's most innovative feature is the treatment of the branding of radium as an unproblematic 'scientific' solution to a myriad of health and cosmetic challenges. So effective was the effort that even when American mining was rendered uneconomic by competition from the Belgian Congo in the early 1920s, the company successfully sold large quantities of imported products.

In the post-World War I era, radium salts met demands for cancer therapy. Hollow needles containing radium salts or seeds of hollow gold spheres filled with radioactive radon gas were implanted into patients' bodies. Beyond the therapeutic use in cancer treatment, the Standard Chemical Company successfully interpreted radium as a normal part of everyday life. Building on European promotion of radioactive spa water before the First World War, it normalized the expectations of longer lives and better health by means of radium. Men were promised masculinity and revived virility, and women were promised femininity, as both categories were reinforced.

Ironically, as Rentetzi points out, while new uses both demonstrated and required scientific expertise, growing scientific evidence of the danger of radium was ignored and suppressed. The company overlooked the shocking illness and early deaths of staff. Notoriously, uses extended to luminous dials on watches and instruments. Large numbers

of the young women employed to paint these using brushes, which they licked to get a good point to ensure the accuracy of their painting, suffered from fatal cases of cancer. Early in its history, the company successfully lobbied against Congressional moves for a government monopoly over radium. Then, in the post-war years, regulation of radiation exposure, as imposed in Britain in 1922, was delayed by almost a decade.

As a business history, *Seduced by Radium* has its weaknesses. Although the first account of an important company that is very clear about the corporation's beginnings, it neglects events marking the end of the Standard Chemical Company in the 1930s. Nor does it illuminate the company's scale by comparison with the standards of contemporary chemical or pharmaceutical concerns. But, of course, the book is not primarily a business history. Rather, it is a most innovative contribution to the study of the use and abuse of science in validating brands, and, indeed, as a brand in itself. There are few works which do this, and by studying the marketing, production technology and medical history together, Rentetzi provides a most useful model for others to emulate.

Yet, broad as is the scope, perhaps surprisingly, Rentetzi does not place the account in the context of literature about early twentieth-century pharmaceuticals. Long ago, Rima Apple told the story of *Vitamania* in America and the enthusiasm for vitamins contemporary with the radium craze (1996). More recently, in *Remaking the American Patient* (2016), Nancy Tomes told of 'How Madison Avenue turned patients into consumers'. Neither of these important histories is mentioned even in the bibliography. The excitement over the medical use of radioisotopes discussed by Angela Creager in *Life Atomic* (2013) occurred slightly later but also in the context of minimization of the dangers of radioactivity. Creager's book is referenced, but only incidentally. Equally, the development of the chemical industry at the time is glancingly referred to, though there was much ambivalence about its products – particularly poison gas and corresponding boosterism. Andrew Ede's work on the promotion of Abraham Cressy Morrison's *Man in a Chemical World* provides a stimulating comparison (*HYLE* (2006) 12(2), pp. 193–214). Doubtless, there are distinctive features to the radium story, but by avoiding these contexts, Rentetzi leaves the elucidation of such issues to future scholars. Her well-written account of a topic of wide public interest should undoubtedly attract students and others from a wide range of backgrounds.