

Radioactivity A History of a Mysterious Science

Marjorie C. Malley
Oxford U. Press, New York, 2011.
\$21.95 (267 pp.).
ISBN 978-0-19-976641-3

In the closing years of the 19th century, European scientists made a series of intriguing discoveries about what Pierre Curie and Marie Curie would soon dub “radio-activity.” Those discoveries would have profound implications not



only for physics and chemistry but also for medicine, archaeology, meteorology, and eventually the military. That project of understanding and harnessing radioactivity, with all of its promise and threat, was a crucial contribu-

tion to modernity in the 20th century.

In part 1 of *Radioactivity: A History of a Mysterious Science*, author Marjorie Malley skims lightly along the surface of the subject's important scientific history, starting with Henri Becquerel's experiments with uranium minerals in 1896 and ending with Otto Hahn, Fritz Strassmann, and Lise Meitner's discovery of nuclear fission in 1938. Along the way, Malley offers a soupçon of cultural and political history: “It was 1895 in Europe . . . England, France, and Italy were staking out claims to parts of Africa, while across the Atlantic pioneers streamed into the remaining American Indian territories. . . . A romantic strand was woven into the era's culture.” Token mentions of the Model T and Bakelite, the telephone and Pablo Picasso, suffragettes and the doomed Robert Scott appear alongside Malley's more detailed discussions of researches into radioactive dating techniques, luminous paints, measurements of decay periods and their relationship to alpha-particle ranges, and missing elements in the radioactive decay series.

The author's contextualizing impulse is a good one, though at times her execution feels clumsy. That effort is part of her aim to write a brief bread-and-butter history of radioactivity that weaves in basic observations from the broader history of science literature. She points out, for instance, that what are later seen as important discoveries may go relatively unnoticed in their own time, or they are seen by those who do notice—including their own discoverers—as either trivial or con-

founding. To illustrate the complex social and professional influences on priority disputes, she tells the story of how Frederick Soddy received credit for the discovery of isotopes, despite the legitimate claims of several other, less well-known scientists. None of those basic themes will be news to anyone who has given much attention to the history of science; the author clearly wants to reach readers for whom such observations will be novel.

According to Malley, and in consonance with her professional background, *Radioactivity* grew out of her desire to provide an overview for interested nonspecialists, particularly students and teachers. Part 1 of the book functions well for that purpose. For readers who know little or nothing of the history and are not interested in the technical details, Malley's book is a solid, concise introduction to the topic.

What the book is not—if you will pardon the pun—is scintillating. The author's peculiar choice to separate the scientific narrative from the social, cultural, philosophical, and medical aspects of radiation means that some of the more striking and compelling parts of the story are not revealed until parts 2 and 3. Malley's organization gives the book a disjointed quality. We get a basic biography of Marie Curie in an early chapter, for example, but only near the end of the book do we learn about the grievous effects of radiation on her health or her awed description of the glowing tubes in her workroom as “faint, fairy lights.” Furthermore, the reader often has a sense of missed opportunities. Why not, for instance, offer a less fragmented, richer account of the discovery of fission, given what a fascinating and important moment it is? The author also claims at several points that the science of radioactivity created new opportunities for women beyond the likes of confirmed contributors such as Curie and Meitner. But not much detail is given about those other women or their professional lives, nor is it adequately explained why radioactivity research should be a particularly congenial field for women.

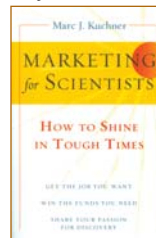
Despite its shortcomings, *Radioactivity* is a good starting place for those encountering the material for the first time. Perhaps some of its lacunae will be taken by its most enterprising readers as a challenge to learn more about this crucial history.

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Marketing for Scientists How to Shine in Tough Times

Marc J. Kuchner
Island Press, Washington, DC, 2012.
\$19.95 (236 pp.).
ISBN 978-1-59726-994-0

I have a rule for movies and books: Movies must capture my attention within 15 minutes, and books must engage me within 50 pages. Because I made a commitment to review Marc Kuchner's *Marketing for Scientists: How to Shine in Tough Times*, I laid aside my rule and I was pleasantly surprised; it did improve.



Aspects of *Marketing for Scientists* rubbed me the wrong way. Right away Kuchner tells us about his interests in country music and songwriting. Those topics were not my primary concern; for me, the references to them were a distraction. Moreover, the off-topic, wordy references are interspersed throughout the book, making it much longer than necessary. Of course, if you are an aspiring musician and scientist, the book is perfect for you. Kuchner also makes a lot of glib comments about people, and scientists in particular, that make them seem self-centered and shallow. I often disagreed with those comments and found them to be a real turnoff.

According to the book's website, *Marketing for Scientists* is devoted to helping scientists use business and marketing techniques and tools “like branding, salesmanship, and social media . . . to win jobs and grants, improve the culture of science, and help shape the public debate.” A lot of Kuchner's advice is useful, and because of the way the chapters are divided, it will be easy for readers to pick and choose the topics that most interest them.

Much of the advice is common-sense basic psychology. For example, on page 46, Kuchner describes how to greet someone: “The formula includes pausing to make eye contact before you smile.” On page 53, he explains how a scientist can be more effective when attending networking events: “I try to keep an eye out for the new people.” And on page 57, he reminds readers that it feels good to receive praise: “I've found that giving my colleagues a little bit of well-timed, vigorous attention can go a long way.” Okay, it sounds a bit calculating, but in our busy lives, we

sometimes forget that compliments and encouragement can really help others to feel acknowledged, accepted, and included. Besides, it is important to celebrate successes, even if they are not our own. Although the book contains an overwhelming set of marketing approaches and references, Kuchner provides a succinct table (on page 96) that illustrates ineffective versus effective marketing techniques. An astrophysicist at NASA's Goddard Space Flight Center, Kuchner also demonstrates a good sense of the culture of the scientific community.

Some parts of the book are stellar. Kuchner reached out to obtain input and quotes from key people in the know, including Anne Kinney, a division director at NASA, and Nell Greenfieldboyce, a science correspondent for National Public Radio. I particularly enjoyed the section in chapter 9 that discusses the types of figures to use in grant proposals and presentations. According to Kuchner, the "beautiful butterfly figure" is just to grab the reader's attention; the "family portrait figure" sums up the contributions of everyone else in the field; and the "Jenny Craig figure," the before-and-after photo, is essential to illustrate "an example of what they can expect." I also found his characterization of proposal blunders (on page 129) both hilarious and helpful. If you are only going to read one section of the book, read "Crowdsourcing and citizen science" in chapter 14, which is concerned about marketing science itself.

In terms of career-development generally, I would recommend *A PhD Is Not Enough! A Guide to Survival in Science* (2nd edition, Basic Books, 2011) by Peter Feibelman and *Becoming Leaders: A Handbook for Women in Science, Engineering and Technology* (NSERC/Petro-Canada, 2002) by F. Mary Williams and Carolyn Emerson. The former is interesting for scientists at many levels, not just graduate students. The latter is, for the most part, equally applicable to men as it is to women and is packed with information covering a broader scope than Feibelman's book. The book that's next in line for me to read is *The Black Academic's Guide to Winning Tenure—Without Losing Your Soul* (Lynne Rienner, 2008) by Kerry Ann Rockquemore and Tracey Laszloffy.

Readers of *Marketing for Scientists* have to keep things in perspective—if you did everything suggested in the book, no time would remain for research. And does anyone really need a logo? However, if you or your accom-

plishments are consistently overlooked, then maybe you need to heed some of its advice, not just to survive but to flourish.

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