

Book Reviews

becoming *Activists* for God's kingdom on earth; rejecting our culture's way of *Konsumerism*; and *Eating* joyfully, thankfully, reverently, and ethically. (Consumerism is misspelled intentionally with the hope that readers will be more likely to remember it.) The authors suggest a number of specific ways in which Christians can become AWAKE, better stewards of God's creation, although they admit that they have provided only "a mere outline of possibilities and suggestions to get readers started." They support their assertions by revisiting their discussion of Genesis, where the "ruling" mandate of Genesis 1 is qualified by the "serving" mandate of Genesis 2. As God's vice-regents, humans must "imitate the nature of God's own rule of the world, which has been powerfully displayed in the servanthood of the incarnate Son of God."

As stated by Richard Bauckham on the very first page, "this book deserves to become the standard work of its kind." The father and son team of Douglas and Jonathan Moo have written a comprehensive introduction to a biblical theology of creation care that is well organized, accessible, and applicable for a wide spectrum of Christian readers. An extensive scripture index is included at the end of the book, along with an author and a subject index. Although there is no bibliography, the book is replete with footnotes that include references to a variety of pertinent books and articles. Anyone who wants to delve more deeply into this topic will find the references in the footnotes most helpful. The authors provide numerous thought-provoking quotations from a variety of sources in the sidebars of many pages, and each chapter concludes with a series of relevant discussion questions, making this book a good choice for adult discipleship classes or study groups. All of these components make this book a welcome addition to the body of literature that addresses the topic of creation care from a biblical perspective.

Reviewed by J. David Holland, Department of Biology, University of Illinois at Springfield, Springfield, IL 62703.



THE RADIUM GIRLS: The Dark Story of America's Shining Women by Kate Moore. Naperville, IL: Sourcebooks, 2017. 496 pages. Hardcover; \$26.99. ISBN: 9781492649359.

In the years preceding WWI, the Radium Girls, teens and young women in their early twenties, gratefully took a job with the United States Radium Corporation (USRC) where they painted watch and instrument dials with radium-containing paint. The exceedingly fine work required precision brushes and the young

women were taught to "lip point" their brushes to aid this fine work. Lip pointing was a technique in which the dial painters placed their brushes into their mouths to make the brush tip pointed for the fine work, then dipped the brush into the radioactive paint, painted a number on a dial, and then repeated the process. "Lip, dip, paint," repeat. The USRC assured the dial painters that the paint was not harmful. In fact, in the earliest years following the Curies' discovery of radium, it was believed to have health benefits. Radium was an ingredient in tonics, cosmetics, and more. They could not have been more wrong!

Every time the dial painters pointed their brushes with their lips, they ingested radium. Radium dust rained down on the employees, covering their hair, clothes, and skin. They carried the dust home to their families and walked it out of the plant and onto the sidewalks of their communities with their shoes.

It did not take long for the dial painters to show signs of radium poisoning. Their teeth fell out, their jawbones fractured, and, shockingly, pieces of mandible came out into their mouths. The wounds that were left when they lost their teeth failed to heal. They developed severe anemia, limps, and sarcomas. Doctors and dentists were befuddled. Slowly, doctors, dentists, and the dial painters derived a conclusion. The paint was poisoning them. USRC's behavior in response to the dial painters' illnesses was unforgivable. Through investigation and litigation, as told in this riveting work of nonfiction, it became clear that USRC knew, early on, that radium was making the dial painters sick. In spite of this, USRC actively worked to hide the danger from their employees. USRC began innocently ignorant of the danger of radium, evolved to willful ignorance, and then quickly to an active and malicious cover-up.

The Radium Girls: The Dark Story of America's Shining Women by Kate Moore paints the story of USRC's indefensible actions and failure to act on behalf of their employees. Moore shares the personal stories of several of the dial painters and their suffering due to radium poisoning through their letters, diaries, testimonies, and interviews with living relatives. She recounts the extensive legal battles that ensued to compensate the dial painters (and their families) for the suffering and loss of life they experienced because of their exposure to radium.

The book includes enough of the science of radium and radiation so the average reader can understand why radium causes the kinds of damage the dial painters experienced, but it is not primarily a science book. It covers the evidence, trials, and appeal hear-

ings that led to changes in worker protection laws but is not primarily a book about changing the law. *The Radium Girls'* most compelling feature is the stories of the young women. Moore tells their stories such that they pop from the pages as real human beings with hopes and dreams, experiencing love and loss.

For me, a scientist, the book was a sobering reminder of the responsibility scientists have to do our important work carefully, thoroughly, and ethically. When I am working to make my laboratory OSHA-compliant, I will think of the dial painters and, rather than grumble about the extra work, I will be grateful for the protections we have in labs and industry thanks to the radium girls, whose fierce persistence led to the formation of OSHA and other organizations. The story of the dial painters reminded me that the world was (and unfortunately still is) a place where people who lack power—women, children, people of color, and the poor—also lack a voice. The story compels me to be a voice, whenever I can, for those who lack power; this is an especially important ethical responsibility for Christians.

Who should read this book? Anyone interested in science, law, or business regulations. Anyone who loves a good nonfiction story with sympathetic characters and real-life villains. I will recommend this book to some of the high school students in my church who love science, especially the girls. It is a compelling story of young women who found their voices and made a difference in history.

Reviewed by Sara Sybesma Tolsma, Professor of Biology, Northwestern College, Orange City, IA 51041.



HISTORY OF SCIENCE

THE RHINOCEROS AND THE MEGATHERIUM: *An Essay in Natural History* by Juan Pimentel, translated by Peter Mason. Cambridge, MA: Harvard University Press, 2017. 364 pages, including contents, prologue, notes, acknowledgments, credits, and index. Hardcover; \$29.95. ISBN: 9780674737129.

For a person interested in natural history, the notion of a “fantastic binomial” may bring to mind a favorite plant, animal, or fossil and its uniquely crafted name following the Linnaean nomenclature for a species. But for Spanish historian Juan Pimentel, a “fantastic binomial [is] the combination and setting into motion of two objects or persons who are apparently unconnected” (p. 6). In *The Rhinoceros and the Megatherium*, Pimentel crafts an extended essay that describes the parallel journeys of two marvelous mammals to the Iberian peninsula: one a live crea-

ture from the Far East, and the other a fossil from the western hemisphere.

The first three chapters tell the tale of Ganda, a live rhinoceros transported from India to Portugal in 1515 who was named in honor of the native term for the animal. To the Portuguese people, this massive animal represented their perception of the Orient: something unfamiliar, exotic, and dangerous. What was known of rhinoceroses at the time was primarily the stuff of legend, stemming from the works of ancient Greeks such as Strabo and Pliny, and often becoming conflated with stories of the mythical unicorn. The rhino was viewed as a ferocious, brutal creature who was built to destroy its natural enemy, the elephant. Upon coming into contact with animals such as rhinos, many people simply sought to reinforce their preconceived notions about these animals, hence the staged battle between Ganda and a juvenile elephant that was not in any way ready to fight the rhinoceros. Ganda was eventually gifted to Pope Leo X, but tragically died in a shipwreck on his way to Rome. Pimentel contests that no one would remember this tale were it not for Albrecht Dürer’s classic woodcut that immortalizes the creature. This image, which would spread around the world, depicts a creature with some of the key traits of a rhinoceros, such as its robust body, stout legs, and the nose horn that gives the animal its name. But it also features what look like overlapping plates of armor, thick reptilian scales, and a small unicorn-like horn perched between its shoulders. Apparently, Dürer actually never witnessed Ganda firsthand, basing his representation on a descriptive letter, an original illustration (which has been lost), and undoubtedly a host of preconceived notions about the animal. Hans Burgkmair produced a woodcut around the same time that more accurately represented the anatomy of the rhinoceros, but it lacked the power of Dürer’s chimeric piece that carried the “fables and words of antiquity” about the animal (p. 100).

The next three chapters tell the story of a different beast, whose bones were dug up from the earth near the Luján River in present-day Argentina. The fossil was initially taken to Buenos Aires before eventually being transported across the Atlantic Ocean to the Royal Cabinet of Natural History in Madrid during the summer of 1788. This skeleton was like nothing anyone had ever seen before—it was massive and had an anatomy unlike any modern creature known to science. Initially reconstructed as a pachyderm or large cat, the first people to study it did not really know what to make of it. Juan Bautista Bru and Manuel Navarro collaborated to produce illustrations and engravings of this beast to publicize it, but