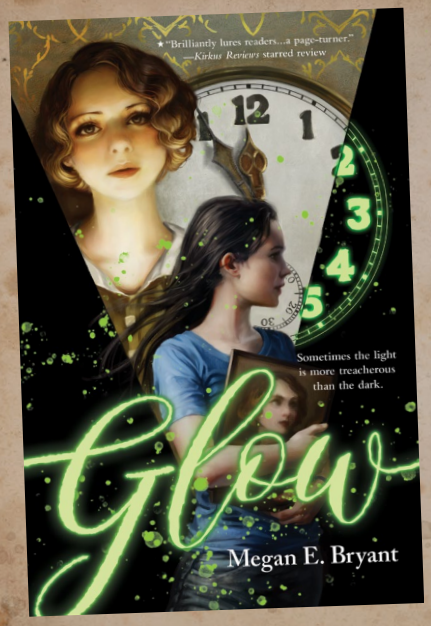
Glow

Fact Sheet

World War One, known as the Great War for the global devastation it unleashed, brought about tremendous advancements in military technology. People didn't know at the time that technologies on the home front were just as devastating. Military strategies like night fighting and trench warfare demanded that soldiers have the ability to coordinate their movements in the dark. Glowing radium-laced paint, which could be applied to watch dials, made that possible. But for the teenage girls and young women who painted the watch dials—the Radium Girls—that technological marvel would prove to be deadly.

- Marie and Pierre Curie discovered the element radium in 1898.
- Radium was initially hailed as a panacea that could treat almost any ailment. It was included in medicines, tonics, and even water pitchers that promised a youthful glow from drinking radioactive water.
- Radium was also added to multiple consumer products, including cosmetics, chocolate, toothpaste, and even toys.
- At one time, radium was considered the most valuable substance on the planet, with prices per gram at more than $100,000.
- Radioactive paint was used to make almost any object glow in the dark—from keys to clocks to light switches to exit signs. The most infamous of these items, though, were the "trench watches" distributed to soldiers during World War I.
- Girls as young as 11 worked as dialpainters in factories in the United States and Europe, with American plants in New Jersey, Connecticut, and Illinois.
- The dialpainters are most famous for painting glow-in-the-dark watch faces, but they also painted gun sights, as well as dials for use in airplanes, tanks, and submarines.
- Dialpainters came into contact with so much radium paint and dust that they were said to glow like snowflakes after leaving the factory.

- Since the sticky radium paint flattened their brushes, dialpainters were taught to point their paintbrushes with their lips. This practice, called lip pointing, caused the women to ingest dangerous amounts of radium.
- Radium and calcium share a similar chemical structure, which causes the human body to deposit radium in the teeth and bones, where it emits alpha particles that cause catastrophic damage.
- Dialpainters began to suffer debilitating illnesses from their work with radium as early as the 1920s, including necrosis of the jaw, severe anemia, and rare cancers.
- Meeting in doctors' and dentists' waiting rooms, the dialpainters soon realized that something in the factory was poisoning them.
- Harrison Martland, the chief medical examiner for Essex County, New Jersey, was among the first to believe the Radium Girls' claims. For decades, he maintained a list of dialpainters who eventually succumbed to radium poisoning, known as the "List of the Doomed."
- When Catherine Donohue, a dialpainter in Illinois, testified about her suffering due to radium exposure, she presented a jewelry box containing pieces of her jawbone to the court.
- In the 1930s, dialpainters brought some of the first successful workers' compensation cases in US history, though many were no longer alive to receive the benefits that they were ultimately awarded.
- Half-life refers to the length of time it takes for an element's radioactivity to reduce by half. The half-life of radium is 1,620 years.
- Given radium's prolonged decay, both the factory sites and workers' graves remain radioactive today and will continue to be radioactive for centuries.
- Radium continued to be used, with safer application methods, in glow-in-the-dark products into the 1960s.
- The legacy of the Radium Girls includes advancements in workplace health and safety laws, as well as improvements in laboratory equipment, that still benefit us today.



About *Glow*

When thrift-store aficionado Julie discovers a series of antique paintings with hidden glowing images that are only visible in the dark, she wants to learn more about the artist. In her search, she uncovers a century-old romance and the haunting true story of the Radium Girls, young women who used radioactive paint to make the world's first glow-in-the-dark products—and ultimately became radioactive themselves. As Julie's obsession with the paintings mounts, truths about the Radium Girls—and her own complicated relationships—are revealed. But will she uncover the truth about the luminous paintings before putting herself and everyone she loves at risk?

Facts collected by Megan E. Bryant