An incomparable intellectual who fell through the cracks of history

Katherine Jones, Lady Ranelagh, worked at the heart of seventeenth-century scientific debates — in the shadow of her brother, Robert Boyle. **By Georgina Ferry**

The foundation of the Royal Society of London in 1660 established an institutional focus for experimental science. The society did not admit female fellows until 1945. A glance at its history gives the impression that seventeenth-century natural philosophy was an entirely male enterprise. Fortunately, feminist scholarship over the past few decades has unearthed women such as philosopher Anne Conway and writers Dorothy Moore and Mary Evelyn, who were active in the intellectual ferment of the time.

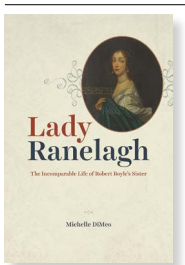
Now, Michelle DiMeo has produced a portrait of another influential female thinker who has been hiding in plain sight — as a footnote in the story of her more famous brother, chemist and Royal Society co-founder Robert Boyle. DiMeo reveals Katherine Jones, Lady Ranelagh, as central to political, religious, philosophical and medical discussions, yet destined to be forgotten, because she obeyed the convention that women should not put their thoughts into print. DiMeo, a librarian at the Science History Institute in Philadelphia, Pennsylvania, has used her archival skills to trawl the papers of Ranelagh's mostly male contemporaries to uncover her role as a public intellectual.

Katherine Boyle was born in Ireland in 1615, one of 15 children of the Earl of Cork, who raised them to be opinionated and ambitious. Katherine's piety and social standing later opened doors without risking her reputation. Unlike her brothers, she had no formal schooling, yet she grew up literate, articulate and curious. After her mother died in 1630, she took care of Robert, then only three years old. It was the beginning of a lifelong bond, although they were separated for much of his childhood. Robert grew up to be the "father of chemistry", for his discoveries on the nature of air and his approach to experimental natural philosophy.

Married off to Arthur Jones (later Viscount Ranelagh), Katherine had four children by the time she was 25. In 1642, she fled an uprising of Catholic rebels and settled in London with her children. She lived apart from her husband — a boor and gambler – but kept her title.

MICHAEL CHEVIS/15TH EARL OF CORK AND ORRERY

Lady Ranelagh was a noted member of the Hartlib circle, a precursor to the Royal Society.



Lady Ranelagh: The Incomparable Life of Robert Boyle's Sister
Michelle DiMeo
Univ. Chicago Press (2021)

In London, she became one of the most active members of the circle of correspondents cultivated by the polymath Samuel Hartlib. The group shared, copied and discussed letters and manuscripts; Ranelagh hosted meetings in her home. Members admired her contributions on politics, religion and natural philosophy, dubbing her "the Incomparable" and citing her frequently. The interests of the circle evolved, converging on new, 'useful' knowledge revealed through experimental science, especially chemistry. One letter mentions Ranelagh as an early user of optical instruments such as a telescope.

Ranelagh introduced her teenage brother Robert to the circle after he returned from a tour of Europe in 1644; she became his spiritual and intellectual mentor. As he focused on chemistry, she equipped a laboratory at his

Dorset home. He thanked her: "the delights I taste in it, make me fancy my laboratory a kind of Elysium" (spelling modernized). In 1668, he moved permanently into Ranelagh's home in London's fashionable Pall Mall.

Ranelagh collected and exchanged recipes to treat common ailments, not unusual for women of the time. However, she and Boyle used empirical methods, testing products in the laboratory and recording the results. Boyle claimed that Ranelagh had cured dozens of children of rickets using a copper-based compound. She also took down another's first-hand account of an experiment that would now be classified as alchemy: the transmutation of metals. She influenced Boyle's writing on moral matters, and encouraged his advocacy of empiricism and dismissal of Aristotelian ideas.

Edged out

During the 1660s, the Royal Society moved into the intellectual space of the Hartlib circle, but it was more exclusive and politically conservative. It communicated through print publication and public demonstration, from which women were almost entirely excluded. A visit in 1667 by the outspoken writer Margaret Cavendish, Duchess of Newcastle, was an experiment not repeated. Cavendish arrived late, dressed 'immodestly' and treated the demonstrations with condescension. Her "boldness and profaneness is allowed to pass for wit", Ranelagh wrote to another brother. This criticism of Cavendish burnished her own reputation for propriety, which enabled her to establish links with many of the society's members even though she could not be admitted.

DiMeo is scrupulous in tethering her observations to their archival sources. As a result, she sometimes underplays the historical context of this impressive woman's story. Ranelagh lived through violent rebellion, civil war, a king's execution, religious intolerance, a grim protectorate followed by a riotous restoration, plague, fire and another king deposed. DiMeo notes these events, but I longed for the sound and colour of such turbulent times.

Ranelagh died in 1691. Boyle, broken-hearted, followed a week later, and they were buried together. At the funeral, the bishop of Salisbury declared that Ranelagh "made the greatest figure … of any woman of our age". Yet, DiMeo tells us, her life "quickly became a shadow". Whereas Boyle made sure that his papers and published works survived for posterity, Ranelagh left no archive and published nothing. That her story is gathered from the papers of her male relatives and associates highlights how easy it is for women to fall through the cracks of history.

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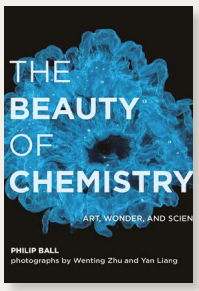
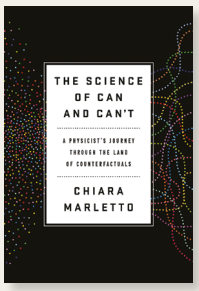
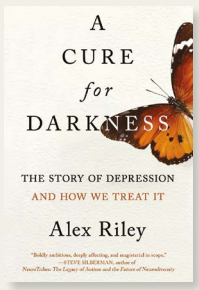
Books in brief



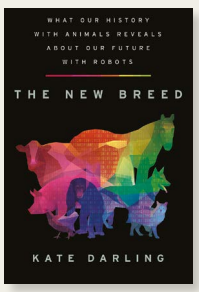
The Beauty of Chemistry
Philip Ball *MIT Press* (2021)
When Francis Crick and James Watson discovered DNA's double helix, they privately called it "beautiful", says science writer Philip Ball. But in 1953, "such expressions of exuberance were not welcomed in the austere annals of science". Ball's scintillating book is a paean to chemical beauty in nature and laboratories, with lavish images created by Wenting Zhu, Yan Liang and the Chinese Chemical Society, using microphotography, time lapse, thermal imaging and more. Would that it had existed when I was an undergraduate chemist.



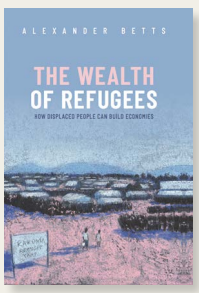
The Science of Can and Can't
Chiara Marletto *Viking* (2021)
GPS depends on phenomena described in the general theory of relativity, but nothing in the theory predicted it. The possibility of GPS was thus a "counterfactual", notes theoretical physicist Chiara Marletto, whose engaging book centres on these "facts about what could be". By restricting itself to statements about initial conditions and laws of motion, she says, physics "is missing something essential". Similarly, electron–proton attraction underlies our bodies' chemistry — but there is no trace of biological complexity in the laws of physics.



A Cure for Darkness
Alex Riley *Scribner* (2021)
Working at London's Natural History Museum, Alex Riley published his first academic paper. It didn't satisfy him. Later, he began to cry in a supervisory meeting, and left academia. Now a science journalist, he has received diverse professional advice and treatment for depression. His first book, a substantial and revealing history of the condition, is thus both subjective and objective, grappling with the opposing psychological and biological therapies of pioneering psychiatrists Sigmund Freud and Emil Kraepelin, and their divided successors.



The New Breed
Kate Darling *Henry Holt* (2021)
The word 'robot', from the Czech for 'forced labour', was coined in a 1920 play by Karel Čapek about artificial people, exploited in factories, who rebel against their makers: a conflict-based, influential vision of artificial intelligence. Technology ethicist Kate Darling pursues a different view in her original, humane book. She compares robots with animals, long used for work, weaponry and companionship. "Like robots, animals can sense, make their own decisions, act on the world, and learn." But they cannot replace human beings.



The Wealth of Refugees
Alexander Betts *Oxford Univ. Press* (2021)
More than 80 million people are currently displaced; at least 25 million are refugees, driven to leave their country. Alexander Betts has studied them for many years, focusing on camps and cities in Africa. The challenging title of his avowedly practical study — considering ethics, economics, politics and policy — was inspired by Adam Smith's 1776 book *The Wealth of Nations*, which argued that countries flourish when citizens can pursue their own interests. Such autonomy is also desirable, argues Betts, for today's refugees. **Andrew Robinson**