

The Tehri Dam on the Bhagirathi River, a headstream of the Ganges, in India.

resilience by allowing capitalistic and free-market practices such as taxes on land and produce, and insisting on open markets that drew food away from where it was most needed.

The British colonial governors were convinced that they could engineer Indian modernity. Between 1885 and 1940, the government built a network of irrigation canals in the Punjab to turn “waste” land into cropland, creating prosperous “canal colonies” such as the Chenab settlement. These hydro-engineering schemes altered India’s economic landscape while producing a winner-takes-all scenario. “The control of water as well as control of credit concentrated land in fewer hands,” further disenfranchising the rural poor, Amrith writes.

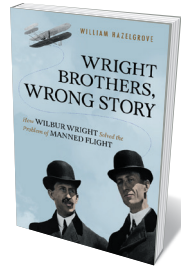
This is just one demonstration of how water management demands holistic thinking. Rivers and waterways do not abide by political borders. The 1947 partition, in which the subcontinent was summarily split into India and Pakistan by the withdrawing British, divided the waters as well as the land and the population. Disputes between the two nations about control of the Indus were among the earliest ‘water wars’ on the subcontinent, which persist today. Several stem from huge hydro-engineering projects planned for rivers in the Himalayan regions of India, Nepal, Bhutan and Pakistan, which would create 400 dams — roughly 1 every 32 kilometres. China, too, has a major stake in this game, with its plans to dam the Tibetan headwaters of the Brahmaputra.

*Unruly Waters* is an interesting counterpoint to studies of water’s role in the history of China (my own included). There are as many contrasts as similarities. India does not have quite the stark wet south–dry north climatic division seen in China; nor are its rivers so strategic for trade and conquest. Rather, India’s situation shaped its prospects: it is flanked by concave coasts and, after 1869, was accessible from Europe through the Suez Canal. China’s climate is also less in thrall to monsoon conditions.

India lacks China’s quasi-mythical narrative of civilizational continuity maintained by imperial dynasties. Nor does it have a long history of state-controlled hydro-engineering to exploit the major rivers and to build canals and reservoirs for trade, military transport, water storage and irrigation (A. Janku *Nature* 536, 28–29; 2016). These two factors — the symbolic and practical value of waterways — are surely connected, even if not in the simplistic and eurocentric idea of “oriental despotism” founded on “hydraulic ▶

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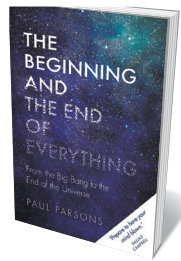
## Books in brief



### Wright Brothers, Wrong Story

William Hazelgrove PROMETHEUS (2018)

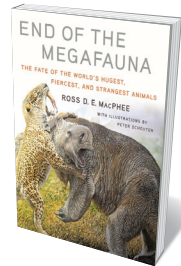
In December 1903, the first 12 seconds of controlled, human-powered flight took place near Kitty Hawk, North Carolina. That triumph is engraved in history; less so, the story of Wilbur and Orville Wright, the uber-geeks behind it. In this gripping dual biography, William Hazelgrove argues that theirs was no partnership of equals, as Orville claimed: it was Wilbur who rewrote the science of aeronautics. Hazelgrove delves into their experimental tinkering and family dynamics, but the real story here is that, as he eloquently puts it, one brother was a poet, and the other a scribe.



### The Beginning and the End of Everything

Paul Parsons MICHAEL O'MARA (2018)

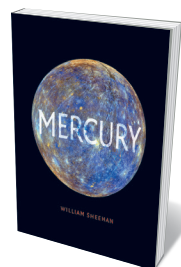
If a soup-to-nuts natural history of the Universe appeals, this one is a winner. Paul Parsons, a theoretical cosmologist turned science writer, delivers the oft-told tale with engaging lucidity, from the birth of the Universe 13.8 billion years ago to its putative end in a bang or a whimper aeons hence. As he traverses the phenomena, he interweaves stories of the researchers who discovered them, such as sixth-century Indian astronomer Varahamihira, who first conceptualized a force something like gravity, and the doughty researchers who found gravitational waves in 2015.



### End of the Megafauna

Ross D. E. MacPhee W. W. NORTON (2018)

Just a few thousand years ago, gargantuan fauna roamed the planet, from the gorilla-sized sloth lemur *Archaeoindris fontoyntonii* to the elephant bird *Aepyornis maximus*. What drove the extinction of these species “lost in near time”? Palaeomammalogist Ross MacPhee examines the theories, such as human over-hunting, climate change, emergent infections and food-web disruption; articulates the ongoing debate around them and what that might tell us about today’s biodiversity crisis; and takes a look at de-extinction. Packed with evocative artwork by Peter Schouten.



### Mercury

William Sheehan REAKTION (2018)

Mercury, the Solar System’s innermost planet, was spotted in antiquity but remained an enigma until the 1960s. Science historian William Sheehan’s portrait of the body (known in ancient Greece as the “scintillating one” for its flicker) reveals it as an airless iron world with an eccentric orbit. He interleaves discoveries, from Johannes Kepler’s prediction of a transit of Mercury in the seventeenth century to NASA’s MESSENGER probe, which relayed gorgeous images and data (such as the presence of a wealth of volatile compounds on the surface) before crashing on the planet in 2015.



### The Light in the Dark

Horatio Clare ELLIOTT & THOMPSON (2018)

The leafless gloom of British winters can evoke powerful emotions. Beset by depression during one, nature writer Horatio Clare vowed to track his psychological shifts during the next. His lyrical memoir mines dark realities, from rural crime to seasonal affective disorder and the rising incidence of anxiety among university students. Yet running through all is the understanding that immersion in nature — the “turbulent, colloquial cries of geese”, silvered fields and sunlit birches — can help in overcoming the condition, as a growing body of Western and Japanese research suggests. [Barbara Kiser](#)