federal dollars were shaping Richland into the very model of the American dream.

Soviet plant managers also copied, and surpassed, the Americans' approach to waste disposal. By 1951, 20% of the nearby Techa river was radioactive effluent from the plant, flowing through dozens of towns in which more than 124,000 people lived. Then, in 1957, an underground waste-storage tank exploded, belching forth a mushroom cloud that irradiated hundreds of thousands of people.

Ozersk's residents cleaned up the plant with wire brushes and hoses — almost certainly receiving severe radiation doses. There is no agreement on how many died as a result of their exposure. Today, the region is a vast radioactive swamp — yet Mayak continues to process radioisotopes, and managers plan to keep dumping radioactive waste into open reservoirs until at least 2018, Brown says.

Back in Richland, whistle-blowers and investigative journalists picking away at the town's anodyne facade forced the US government to reveal the true scale of Hanford's contamination in 1986. Just weeks later, the catastrophic explosion at the Chernobyl nuclear power plant in Ukraine occurred. In the face of this double whammy, Hanford was slated to close. Together with the Mayak plant, it had released much more radioactivity into the environment than Chernobyl and the site will take half a century to clean up. Yet most Richland residents fought hard against Hanford's critics. They loved their town's social homogeneity, orderly management and relative prosperity, and feared that anti-nuke whiners would cost them their apple-pie lifestyle.

The only underwritten character in *Plutopia* is plutonium itself. Brown never explains why bomb-makers preferred plutonium over uranium (it is easier to purify, and requires a smaller critical mass), how it was processed or how fission works. And although radiation physics is swamped with confusing and archaic units, Brown fails to guide the reader through rems, rads, roentgens and curies, when a little context could help to make sense of the numbers.

Nevertheless, *Plutopia* has important messages for those managing today's nuclear facilities, arguing for caution and transparency. Highly subsidized communities are still a feature of civilian nuclear programmes in many countries, including Japan. It is no coincidence, Brown suggests, that the Fukushima nuclear accident in 2011 was characterized by poor safety protocols, official denials and a heavy use of underpaid workers to clean up the mess. ■

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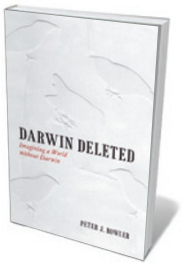
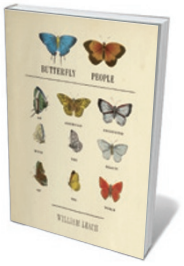
Books in brief

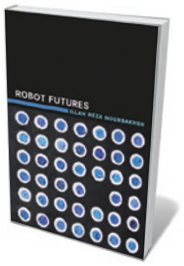


Darwin Deleted: Imagining a World Without Darwin
Peter J. Bowler Univ. Chicago Press *336 pp. $30 (2013)*
Is there anything to add on Darwin and his work? In his 'counterfactual' history, Peter Bowler manages it neatly, wondering what might have happened had Darwin not published his theory of evolution by natural selection. Bowler argues that at the time, only Darwin had the originality and largeness of vision to craft his big idea, but its very boldness polarized thinking. The theory, Bowler surmises, would have emerged *sans* Darwin, but later — which, ironically, might have eased the broad acceptance of evolution.



Butterfly People: An American Encounter With the Beauty of the World
William R. Leach Pantheon *416 pp. $32.50 (2013)*
Butterflies in their thousands blanketed summer fields in nineteenth-century America. These 'flying jewels' drew a generation of amateur natural historians from the cultural chrysalis. Here, historian William Leach celebrates several — including Herman Strecker and Samuel Scudder — who created a home-grown field. Fed by Linnaeus, Darwin and crowd-sourced photographs and specimens, this scientific search for beauty collided early on, however, with the country's commercial drive.

Picking Up: On the Streets and Behind the Trucks With the Sanitation Workers of New York City
Robin Nagle Farrar, Straus and Giroux *304 pp. $28 (2013)*
Daily in New York city, around 9,000 people clear away 11,000 tonnes of household waste. In her 10-year, sometime-firsthand study of 'san man' crews, cultural anthropologist Robin Nagle shines a light on their invisible lives. She reveals them as agents of urban reform and public health; traces the history of sanitation in the city, starting with eighteenth-century reformer Cadwallader Colden's yellow-fever control; and evokes the physical and psychological toll of this dangerous, filthy, necessary work.



Robot Futures
Illah Reza Nourbakhsh The MIT Press *160 pp. $24.95 (2013)*
This glimpse into the future of robotics hums with enthusiasm. In his work, roboticist Illah Reza Nourbakhsh has created a raft of objects and capabilities, from robot three-dimensional visioning systems to a highly propulsive pogo stick. Here, prefacing each chapter with an imagined scenario, he forecasts how bots will invade commerce, the home and the human body. The possibilities — such as therapeutic, injectable robot colonies — are often provocative, but tempered by astute insights into the ethical and social implications of a roboticized world.

Narwhals: Arctic Whales in a Melting World
Todd McLeish Univ. Washington Press *216 pp. $26.95 (2013)*
The tusked, deep-diving, upside-down-swimming narwhal is a cetaceous enigma. Questions hang over its feeding habits, strange dental arrangements, population and migration. In this portrait of the species, Todd McLeish mixes research, observations from High Arctic trips and engaging detours into iceberg ecology and more. While the debates rage on — over the tusk as a sensory organ, for instance — many agree that the animal's adaptive capacity may not keep pace with the shrinkage of sea ice.