Erdrich depicts an entire culture training children from toddlerhood to be stewards of nature.

Non-fiction is also regrettably omitted from *Beasts at Bedtime*, especially beautifully illustrated works for children such as last year's *The Lost Words* by Robert Macfarlane and Jackie Morris. This book was sparked in part by a *Science* study finding that children identify Pokémon characters more readily than real flora and fauna (A. Balmford *et al*. *Science* **295**, 2367; 2002). Macfarlane's poems and Morris's illustrations counter that loss of knowledge by helping children to identify plants and animals, from acorn to wren. Meanwhile, *The Pebble In My Pocket* (1996) and *The Drop In My Drink* (1998) by Meredith Hooper and Chris Coady have made Earth science and the water cycle accessible to young readers. It's hard to imagine projects more relevant to *Beasts at Bedtime*.

These disappointments notwithstanding, Heneghan makes good use of two classics. He uses close readings of Antoine de Saint-Exupéry's *The Little Prince* (1943) and *The Lorax* (1971) by Dr Seuss (pen name of Theodor Geisel) to suggest different approaches to environmentalism for children today.

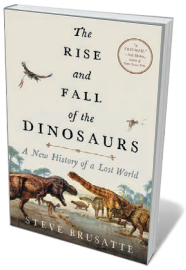
Heneghan sees *The Little Prince* as "a complete guide to understanding our responsibilities in caring for the world". Saint-Exupéry, an aviator in the Second World War, saw the conventional adult world as built on destructive human folly: illusions of control, narcissism and calculative thinking. Heneghan finds a powerful counterweight in the relationship between the Little Prince and the fox. As the fox tells the prince: "You become responsible, forever, for what you have tamed." Thus, Heneghan identifies an ethic of human obligations towards the planet and its non-human denizens.

By contrast, he reads *The Lorax* as an anti-manifesto: a case study of how environmental advocacy can go wrong, with the Lorax as "a self-righteous, blustering, and ultimately failed environmentalist ... hectoring, stigmatizing and shaming" the environmentally unenlightened Once-ler. The Lorax fails to find commonality with a potential conservation ally and engage them intellectually or emotionally.

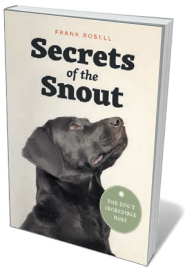
That dual engagement is where children's literature can play a decisive part. Story has the power to develop empathy and build knowledge, as well as nurture curiosity and imagination. Childhood reading is undeniably formative, and it's refreshing to see it being taken seriously. Children's books alone cannot save the natural world; but they can spark concern, teach the science and reveal strategies in ways both subtle and direct. ■

S. F. Said *is a British children's author whose books include* Varjak Paw *and* Phoenix. *Twitter: @whatSFSaid*

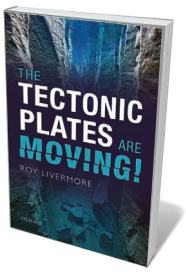
Books in brief



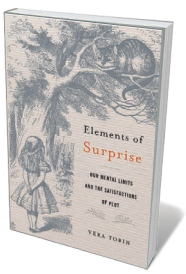
The Rise and Fall of the Dinosaurs
Steve Brusatte WILLIAM MORROW *(2018)*
Palaeontologist Steve Brusatte has described more than 15 new species of fossil vertebrate, including the long-snouted theropod "Pinocchio rex" (*Qianzhousaurus sinensis*). In this vivid, pacy chronicle, he meshes the findings in a field currently seeing a new species unearthed, on average, every week with a re-creation of the dinosaurs' 150-million-year reign. This is scientific storytelling at its most visceral, striding with the beasts through their Triassic dawn, Jurassic dominance and abrupt demise in the Cretaceous period, which spared only the theropods from which birds are descended.



Secrets of the Snout: The Dog's Incredible Nose
Frank Rosell (transl. Diane Oatley) UNIVERSITY OF CHICAGO PRESS *(2018)*
With up to 300 million olfactory cells to our 5 million, dogs are spectacularly equipped to sense fugitive compounds emitted by everything from buried mines to colorectal cancer. In this fascinating study, behavioural ecologist Frank Rosell guides us through compelling research on olfaction-related canine ethology, physiology and neuroscience. Interwoven are feats of star sniffer dogs such as Tucker, a seagoing research Labrador that detects killer whales by locating their faeces; and Aska, trained to smell the pheromones of spruce bark beetles, a major insect pest.



The Tectonic Plates are Moving!
Roy Livermore OXFORD UNIVERSITY PRESS *(2018)*
In 1963, a revolution began to rumble in Earth science. The Vine–Matthews hypothesis (brainchild of marine geologists Frederick Vine and Drummond Matthews) laid the basis for plate tectonics, a key to conundrums as diverse as mountain formation and earthquake location. Consensus came slowly, as geophysicist Roy Livermore charts in this packed account, richly contextualized by the chain of discovery from William Gilbert (author of 1600 treatise *De Magnete*) to Alfred Wegener, Kiyoo Wadati and Ken Bullen. Today's big debates, such as the mechanics of subduction, also get a look-in.



Elements of Surprise
Vera Tobin HARVARD UNIVERSITY PRESS *(2018)*
Plot twists can jolt us into an understanding of fiction's deeper meaning. But how do they work? In this scholarly study, cognitive scientist Vera Tobin pinpoints the psychological quirks that make us vulnerable to literary shock tactics. She shows, for instance, how Charles Dickens harnesses the 'curse of knowledge' bias (the belief that others know what we know) to dizzying effect in his 1861 *Great Expectations*; and how in *Villette* (1853), Charlotte Brontë twists the story twice through unruly protagonist Lucy Snowe, leaving us wallowing in a "vertiginous instability" not unlike Snowe's own.

The Big Cloud
Camille Seaman PRINCETON ARCHITECTURAL PRESS *(2018)*
Photographer Camille Seaman's images of icebergs as entities gnawed by climate change are a window on the world of fast-disappearing polar ice (see J. Hoffman *Nature* **492**, 40; 2012). Here, she turns to a phenomenon even more evanescent: the storm cloud. Carefully avoiding "disaster tourism", Seaman captures stupendous storm fronts, from supercells to baby tornadoes, across South Dakota, Kansas, Nebraska — a record of meteorology under the cosh of a shifting climate, and a homage to untameable nature. **Barbara Kiser**