bipolar disorder. He knew the condition intimately, because his brother had it. Starting in the 1950s, Schou teamed up with fellow psychiatrist Poul Baastrup to conduct a series of lithium experiments with ever stricter conditions, culminating in a double-blind, placebo-controlled clinical trial. Published in 1970 in *The Lancet*, this established beyond doubt that lithium was effective for most people with bipolar disorder, including Schou's brother (P. C. Baastrup *et al. Lancet* **296**, 326–330; 1970).

Today, lithium helps to stabilize the moods of millions of people with the condition, although the dose must be carefully controlled and it can have unpleasant side effects, such as nausea and trembling. Its mechanism is still something of a mystery. Most research targets the delicate chemistry supporting the functioning of neurotransmitters; but as yet, 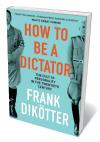definitive results are lacking. Nor has the cause of the disorder been established. It is clear that there is a genetic component: if one of a pair of monozygotic twins (who share all their genetic material) has the disorder, there is around a 60% chance that the other will have it. In dizygotic twins, the figure is 10%.

> *"It is unlikely that a present-day researcher would get permission for experiments like Cade's."*

Finishing *Lithium*, readers are left with a sense of paradox. The drug that set off the 'psychopharmacological revolution' of the 1950s, with antipsychotics and antidepressants arriving in its wake, is in many ways a stunning success. Yet it was developed in a ramshackle pantry, and the bottled urine samples were stored in the Cade family refrigerator. Moreover, in retrospect, the discovery of lithium seems in part related to an erroneous interpretation on Cade's part. The 'tranquillized' guinea pigs were probably showing the first symptoms of lithium poisoning: lethargy is still a warning sign of an overdose. And the step from guinea pigs to humans was a "conceptual leap", as Brown kindly puts it — hardly a deduction from sound theory. It is unlikely that a modern researcher would get permission for experiments such as Cade's.

Cade's findings could easily have foundered if Schou and others, such as US medical researcher John Talbott, hadn't followed up on his 1949 paper. Thus, hailing Cade as a trailblazer is valid — but without Schou and the rest, there would be no trail. Thanks to them all, this ubiquitous element, easily manufactured and never patented by pharmaceutical companies, remains both cheap and invaluable as a treatment for a troubling disorder. ∎

Douwe Draaisma *is professor of the history of psychology at the University of Groningen in the Netherlands, and author of* Disturbances of the Mind. *e-mail: d.draaisma@rug.nl*

Books in brief

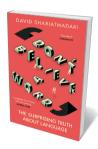### How to Be a Dictator
Frank Dikötter BLOOMSBURY *(2019)*
For this magisterial study on the misuse of power, historian Frank Dikötter analysed the strategies of eight brutal twentieth-century dictators. The result reveals how weak, largely unelectable men such as Adolf Hitler and Joseph Stalin maintained cults of personality through tireless self-glorification, aided by propaganda and the illusion of popular consent. Dikötter's insights into their modus operandi — "to sow confusion, to destroy common sense, to enforce obedience, to isolate individuals and crush their dignity" — make for salutary reading at a time of persistent attacks on democracy.
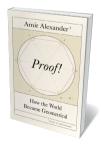
End Times
Bryan Walsh HACHETTE *(2019)*
In this sweeping "brief guide to the end of the world", journalist Bryan Walsh details the science on existential risks, from supervolcanoes to global war — many of them amplified by chaotic governance. He explores United Nations climate conferences, synthetic-biology labs and the US nuclear command-and-control system. He disentangles the maths of asteroid strikes and the complexities of gene editing. And, as billionaires focus on escape (boltholes in New Zealand, space colonization), Walsh envisions survival for the rest of us — a scenario of subterranean refugees subsisting on insects, fungi and rats.
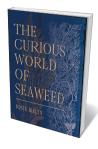
Don't Believe a Word
David Shariatmadari WEIDENFELD & NICOLSON *(2019)*
Language, notes writer David Shariatmadari, is a hall of mirrors: we can understand it only through language itself. His assured tour takes in the origins of language (he argues for nurture over nature) and deconstructs a plethora of myths. These include the supposed demise of linguistic standards, the question of animal communication, the vagaries of translation and the comparative richness of vocabularies. Insights abound, from the blurred boundary between Hindi and Urdu, to Australian languages in which the grammar changes when the speaker's mother-in-law is present.

Proof!
Amir Alexander FARRAR, STRAUS AND GIROUX *(2019)*
In his opus *Elements*, fourth-century BC Greek mathematician Euclid created a "complete world of mathematical truths". Yet, as historian Amir Alexander's subtle chronicle shows, Euclid's ideas really blossomed only in the Renaissance. Then, luminaries such as Leon Battista Alberti codified what they saw as the hidden geometries of the Universe, including the rules of perspective. The geometric imperative went on to shape the French monarchy's rigidly hierarchical world view, symbolized by the formal gardens of Versailles, before emerging in the architecture of power from New Delhi to Washington DC.

The Curious World of Seaweed
Josie Iselin HEYDAY *(2019)*
From the silken greens of *Ulva fenestrata* to the bulbous glories of *Botryocladia pseudodichotoma*, seaweeds are stars of the intertidal zone. This paean by Josie Iselin, a fine-art photographer, and writer celebrates both their remarkable morphology and tactility ("smooth and slimey and tough and stretchy"), and the history of phycology. Iselin studs her evocative text with exquisite 'portraits' of algal species — a mix of archival illustrations, snaps of historical specimens and luminous shots taken using a flatbed scanner. A mesmerizing swim through a liminal world. **Barbara Kiser**