Bethe's long friendship with the great German theoretical physicist Rudi Peierls also comes to life in *Nuclear Forces*. Between 1933 and 1934, Bethe spent a year in Manchester, UK, staying with Peierls' family. In a letter to Arnold Sommerfeld, his mentor, Bethe offers a portrait of a place and an era, remarking that his coal-dust-covered window was cleaned in the spring, after which he could see the rest of the campus "on days when there was no fog".

That year with Peierls was in Bethe's opinion the most productive of his career. He became enamoured of nuclear physics; met Patrick Blackett, an experimental physicist known for his work on cosmic rays; spent time in Bristol, UK. He then moved to Cornell for good. Had someone had the initiative, or daring, to create a position for him in Britain, the course of theoretical physics on two continents might have been very different.

Having settled in the United States, Bethe went to the Washington Conferences on Theoretical Physics every year from 1935 until 1937. He decided not to take part in 1938, because the subject was energy production in stars and "he wasn't interested in that problem". At the urging of fellow émigré Edward Teller, he finally went, and what he heard led him to discover the CNO cycle in stars, in which reactions between protons and nuclei convert carbon sequentially into nitrogen and oxygen and back to carbon, liberating energy. And he identified the dominant processes that power the Sun. At first, the editor of *Physical Review* was not enthused by the CNO article. The resultant delay in publishing proved fortunate for Bethe: it enabled him to win the New York Academy of Science's US$500 prize for an unpublished work on stellar energy. The same work was later instrumental in him winning the Nobel Prize in Physics.

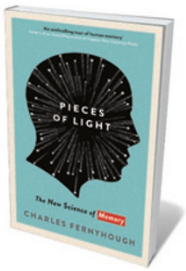
"At first, the editor of* Physical Review *was not enthused."

There is no mention of the legendary story of a romantic walk under the stars, on which Bethe tried to woo Ewald by commenting that at that moment, he was probably the only person on Earth who understood why stars shine. None too impressed, she reportedly replied, "That's nice."

Nuclear Forces does tell a similar story, in which a woman comments on how beautifully the stars shine and her companion proudly responds, "I've known since last night why they shine". The speaker was the atomic physicist Fritz Houtermans, whose early work was part of Bethe's inspiration. Whichever version you prefer, it is a good story. ■

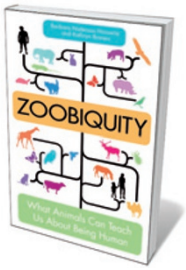
Frank Close *is a professor of theoretical physics at the University of Oxford, UK.*
e-mail: f.close1@physics.ox.ac.uk

Books in brief

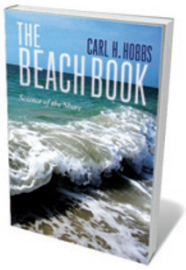


Pieces of Light: The New Science of Memory
Charles Fernyhough PROFILE BOOKS *352 pp. £14.99 (2012)*
We are our memories, says psychologist and writer Charles Fernyhough. Without them, we would be "lost to ourselves". Fernyhough deftly guides us through memory's many facets, from types (autobiographical, episodic, semantic, explicit, implicit, working) to mental mapping, trauma, sense associations such as the smell of fresh paint or a bar from Bach, and the evocative stories of his aged grandmother. Often using himself as a test case, he adds context with research and snippets from a raft of great writers. A thoughtful study of how we make sense of ourselves.

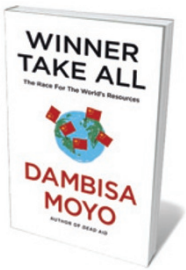
The Violinist's Thumb And Other Lost Tales of Love, War, And Genius, as Written by Our Genetic Code
Sam Kean DOUBLEDAY *416 pp. £20 (2012)*
In this successor to *The Disappearing Spoon* (Little, Brown, 2010), his bestseller on the periodic table, science writer Sam Kean explores the complexities of heredity. The broad focus on DNA allows dazzling diversions: Niccolò Paganini's eponymous thumb; the supersaturation of polar-bear livers with vitamin A; the case of Tsutomu Yamaguchi, who survived both Hiroshima and Nagasaki to live to 93; the key contributions to the field by Dominican nun and chemist Miriam Michael Stimson among others; and much more.



Zoobiquity: What Animals Can Teach Us About Health and the Science of Healing
Barbara Natterson-Horowitz and Kathryn Bowers KNOPF *320 pp. £17.23 (2012)*
Medically, how different are humans from other animals? Cardiologist Barbara Natterson-Horowitz began to probe the divide after learning that emperor tamarins can get stress-related capture myopathy — identical to the human heart condition takotsubo cardiomyopathy. With science journalist Kathryn Bowers, she covers case studies of conditions common across species, such as cancer and heart attacks, and calls for physicians and veterinarians to share data.



The Beach Book: Science of the Shore
Carl H. Hobbs COLUMBIA UNIVERSITY PRESS *192 pp. £41.50 (2012)*
With 44% of humans living 150 kilometres from a coast, according to United Nations figures, the sea's pull is undeniable. Marine scientist Carl Hobbs peels back the façade of sun and surf to explore the science of the strand. He examines in turn the shore itself, wind, waves, tides, sediments, barrier islands and tidal inlets, sand dunes and salt marshes, sea-level rise, erosion and storms. Fascinating phenomena — from surf beat, edge waves and beach cusps to the dunes known as barchans — bob through this crisply written guide to ecology and geology at the edge.



Winner Take All: The Race for the World's Resources
Dambisa Moyo ALLEN LANE *272 pp. £20 (2012)*
Economist Dambisa Moyo, whose hard-hitting *Dead Aid* (Penguin, 2010) criticized 'top-down' aid, pulls no punches in this investigation of China's global 'shopping spree' for resources. Moyo interweaves history into her analysis of the economic implications of China's ascendancy as trade partner and commodities buyer; its influence on markets and resource prices; and the social and political impacts of its investments. There may, she says, be a demographic brake on the resource rush — but commodity crises and wars cannot be ruled out.