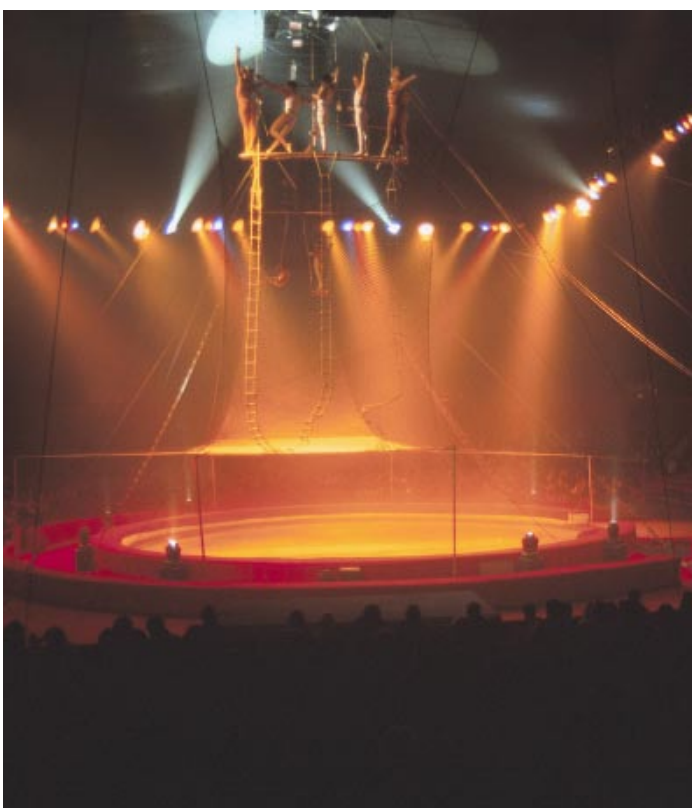
The three-ring circus of eternal life

Two stories of the quest for longevity are as entertaining as achieving it will be revolutionary

Long for This World: The strange science of immortality by Jonathan Weiner, Ecco, $27.99
The Youth Pill: Scientists at the brink of an anti-aging revolution by David Stipp, Portfolio, $26.95

Reviewed by S. Jay Olshansky



PAUL CHARBIT/EXPLORER/HOA-QUI/EYEDEA/CAMERAPRESS

In the longevity circus, it takes all kinds of performers to make a show

THE field of ageing research is full of characters. We have hucksters claiming that cures for ageing can be bought and sold; prophetic seers, their hands extended for money, warning that immortality is nigh; and would-be Nobelists working methodically in laboratories in search of a pill to slow ageing. Humanity seems to be on the verge of discovering this pill, but the story behind the search is as entertaining as the discovery will be revolutionary. These books chronicle the three-ring circus that is the pursuit of immortality.

We are fortunate to have Jonathan Weiner's take on the story. *Long for This World* is a brilliant exposé of the fascinating science that has emerged in the quest for everlasting life, and the quacks, drunks and geniuses participating in one of the greatest shows on Earth. Funny enough, it is difficult to determine which of those groups will eventually achieve it.

As an advocate for radical life extension, Weiner turns to Aubrey de Grey, a fast-talking middle-aged Rasputin-looking figure who believes that many people alive today will go on to live to 1000 years old or older. At first I thought Weiner's choice to centre the book on de Grey would be a disaster, but patient readers will be rewarded with a beautifully told story about longevity science.

De Grey is portrayed by Weiner as confident (often referring to himself in the same light as Gandhi), pretentious ("I'm making so much difference that it's important I don't get assassinated"), naive (having no children himself, he sees no need for future immortals to have them either) and sometimes sauced. The need for scientific facts appears to be no obstacle to de Grey's enthusiasm, though to give him his due he is not selling phoney anti-ageing nostrums and is a never-ending source of science's most important currency: ideas.

"De Grey believes that many people alive today will go on to live to 1000 years old or older"

The genius of Weiner's book is in the storytelling, particularly towards the end when he asks whether humanity should be pursuing radical life extension rather than simply working to extend the duration of healthy life by a measurable amount. From where I stand, while immortalists seek funding for extreme proposals, it's the practical-minded life-extension scientists who will make the progress. A quote from the late biologist Joshua Lederberg says it all: "How much immortality do you want?"

Apparently at least enough to make the inventors of the youth pill plenty of money, according to David Stipp. Weaving together historical views of early immortalists, who occasionally laid a golden nugget of truth, with the modern science behind life-extension research, *The Youth Pill* details the rigorous scientific approaches used in the quest. Stipp's central character is Harvard biologist David Sinclair, who is also a founder of Sirtris Pharmaceuticals – one of the earliest companies created to monetise longevity science. Any time billions of dollars are at stake, there's a risk that research results can become exaggerated when the scientists involved are beholden to investors instead of the scientific method, but Sinclair and colleagues base their views on carefully conducted science. With such limited funding for longevity science, perhaps we have to dance with the devil to secure the elixir of youth.

The contrast between the central figures in each book is astounding, and the stories are compelling and different enough to warrant reading them both. Someone will eventually succeed in this quest for a longevity pill, and when they do, one of the greatest advances in the history of medicine will have been achieved. These books offer a backstage pass to the circus, where you can place your own bets. ■

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Chemical craziness

The idiosyncasies of the elements – and their discoverers – come to life in this account

MATTHEW DONALDSON/IMAGESTATE

The Disappearing Spoon: And other true tales of madness, love, and the history of the world from the periodic table of elements by Sam Kean, Little, Brown, £18.99/$24.99

Reviewed by Clint Witchalls

SAM KEAN tells us that "90 per cent of particles in the universe are hydrogen, and the other 10 per cent are helium. Everything else, including 4.5 million billion billion kilograms of Earth, is a cosmic rounding error." It is this rounding error that provides the fascinating content of *The Disappearing Spoon*.

Kean's interest in the chemical elements began as a young boy when his mother collected the spilt contents of thermometers and stored them in a plastic pill bottle. By all accounts, Kean was a sickly child and a clumsy one too, so there was much mercury to be had. His mother would pour it into the pill bottle's lid and let Kean watch the mercury "splitting and healing itself flawlessly". This early fascination with the curious metal led to a lifelong passion for the periodic table.

Another curious metal to grab Kean's imagination was gallium. It is solid at room temperature but melts at 30 °C. A popular trick – before health and safety ruined the fun – was to give guests gallium teaspoons and then watch their surprise as the spoons melted when they stirred their tea (hence the eponymous "disappearing spoon").

Kean begins his exploration of the elements with these idiosyncratic metals and then proceeds to cover every element under the sun. It is an ambitious project. Writing about Dmitri Mendeleev and others who produced the first periodic table is one thing, but saying something interesting about every one of 118 elements in a mere 19 chapters is something else entirely.

This is a big task and, most of the time, Kean gets it right. There are lots of interesting titbits about the elements, such as the fact that aluminium was once considered a precious metal. Only the most esteemed guests of Napoleon III got to eat with aluminium cutlery – the rest had to make do with mere gold.

Kean is at his most engaging when writing about human folly. As he puts it, "the history of the periodic table is the history of the characters who shaped it". And what characters they were: from the "queer fish" Mendeleev, who didn't believe that atoms existed, to chemical warfare enthusiast Fritz Haber.

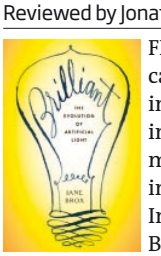
The tales are loosely but expertly woven together. Kean has Bill Bryson's comic touch when it comes to describing genius-lunatic scientists. He is somewhat less adept, though, when writing about the science behind the periodic table. For example, he describes electron d-shells as looking like "misshapen balloon animals", which, try as I might, I simply couldn't visualise.

But it would be unfair to dwell on these shortcomings. The book is not so much a primer in chemistry as a lively history of the elements and the characters behind their discovery.

Light fantastic

Brilliant: The evolution of artificial light by Jane Brox, Houghton Mifflin Harcourt, £16.95/$25

Reviewed by Jonathon Keats



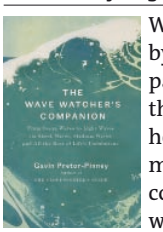
FEW people today can appreciate the impact the incandescent lamp made following its invention in 1879. In *Brilliant*, Jane Brox captures the before-and-after. Beginning with lamps carved from limestone 40,000 years ago, she expertly traces the tortuous route to artificial light. Along the way she describes malnourished peasants who chose to burn the tallow they could have eaten and the advent of cheap kerosene, briefly deemed, in Brox's fine phrasing, "the democratic perfection of light".

Since then, artificial light has increasingly been taken for granted, resulting in a sprawling electric grid and rampant light pollution. While attentive to those problems, Brox doesn't propose any original solutions. Nevertheless, after seeing the value of light before electricity, and how much people could achieve under minimal candlepower, each flick of a switch will make you consider how much wattage you really need.

On the crest

The Wave Watcher's Companion by Gavin Pretor-Pinney, Perigee Books, £15.90/$22.95

Reviewed by Hugh Warwick



WE are surrounded by waves. They pass through us, they allow us to hear and see; they move us and we could not live without them. They are everywhere, yet most we do not even notice.

Gavin Pretor-Pinney did something wonderful with his first book, *The Cloudspotter's Guide*, creating a community of cloud obsessives. Can he do the same with this, more nebulous, subject? While clouds were easy to get started on – just lie back and observe – waves are harder. We think we know about waves, but the beach is just the beginning.

A measure of the success of this quietly informative book is how readily the information is absorbed while you are busy having fun. Stories and science meld, and he manages to effortlessly segue from whip-cracking cowboys to Einstein and photons and on to the art of bodysurfing Hawaii's north shore. I sense a wave community