



BETTMANN/GETTY

Surgery at Bellevue hospital in New York City in the 1870s.

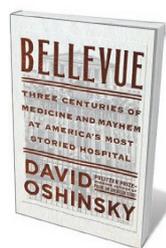
PUBLIC HEALTH

Gore and glory

David Dobbs extols a history of New York's Bellevue hospital, a crucible of discovery in medicine.

To many Americans, the name Bellevue signifies 'psychiatric facility' as much as Bedlam does to Britons. The psychiatric unit of the New York City public hospital gained fame from the stream of cultural icons passing through its portals. Writer Delmore Schwartz arrived in handcuffs after trying to strangle a hostile book reviewer; jazz great Charles Mingus checked in voluntarily, later composing the song *Lock 'Em Up (Hellview of Bellevue)*. Yet, as historian David Oshinsky shows in his sweeping, eponymous chronicle, this oldest, busiest, most storied of New York hospitals deserves equal recognition as a fount of medical discovery.

From its beginnings as a colonial almshouse in 1736, Bellevue had important roles in one major advance after another. It opened the first US maternity ward (1799), nursing school (1873), children's clinic (1874), emergency department (1876), mental-health ward (1879) and, in the famed Carnegie Laboratory (1884), pathology lab. It was the first US medical centre to successfully tie off a femoral artery, and to report tuberculosis as treatable. It pioneered lasting innovations



Bellevue: Three Centuries of Medicine and Mayhem at America's Most Storied Hospital
DAVID OSHINSKY
Doubleday: 2016.

in medical education, public-health outreach and professional nursing; the use of ambulances, amputation, anaesthesia and antiseptics; and successful treatment of AIDS and Ebola. It has achieved all this while struggling to honour a pledge to treat all comers.

That pledge guarantees a huge patient load, heavy on "undocumented, uninsured, and undomiciled" people shunted from other New York hospitals. Many arrive shattered by infectious diseases, mental illness and poverty. This "municipal eyesore most New Yorkers couldn't imagine living without" has repeatedly had to ask the city to give yet more billions, which it always does. The challenges that routinely almost crush the institution

also drive its boundless creativity.

Oshinsky draws deftly from this history to tell stories of an unlikely institution and Western medicine's halting, bloody march forward. He also reveals the torturous ambivalence over universal patient care in a nation where treatment decisions remain largely revenue-driven. To all of it he brings an eye for particulars, a knack for apt quotes and a talent for braiding multiple themes.

One such theme is how often medicine does harm because of compassionate and competitive pressures to do something. In the early nineteenth century, physicians were obliged to "cure quickly", as one complained, "or give place to a rival". Not even presidents were immune to the results of such pressure. In 1881, Bellevue surgeon Frank Hamilton inserted his dirty fingers into the wounds received by President James Garfield during an assassination attempt, probably contributing to Garfield's slow, gruesome death. Hamilton billed the nation US\$25,000 (almost \$600,000 today); he was paid \$5,000.

Oshinsky similarly enlivens Bellevue's more successful work in forensic pathology and AIDS treatment. A century ago, the hospital's Charles Norris, tall, gruff and confident, provided the archetype for the no-nonsense medical examiner. Spending family wealth to stock his labs and working obsessively to solve mysterious deaths, Norris played a prime part in making forensic pathology a medical and legal force in the United States. His best employee, chemist Alexander Gettler, became the mould for the geeky forensic ace of popular culture. Gettler discovered how to

tell whether a floating corpse had drowned or been tossed dead into the water, and how to use soil stains or thread fragments to tie a criminal to a crime. A fellow expert opined that Gettler “sent more criminals to the electric chair through his tests than any police detective”.

The AIDS chapter astonishes more grimly. New York, with a high incidence of intravenous drug use and promiscuous unprotected sex in the late 1970s, was hit hard by HIV. One of the first people to be recognized as having AIDS presented himself in 1980 to Fred Valentine, an infectious-disease specialist at Bellevue, with the rare pneumocystis pneumonia. A second case came days later. Both men soon died, as did eventually hundreds who followed them into Bellevue and nearby New York University Hospital. By 1985, one-fifth of Bellevue’s patients had HIV. At first, these hospitals, with others in San Francisco, California, and the Centers for Disease Control and Prevention in Atlanta, Georgia, fought a seemingly futile effort to contain this accelerating epidemic, even as cases began to be recognized in Africa and on other continents (T. Tansey *Nature* 533, 468; 2016).

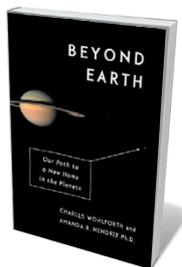
Oshinsky makes vivid the piteous condition of early patients, and caretakers’ struggles with fear of contagion. Bellevue staff’s sense of “therapeutic impotence”, he shows, finally gave way to exhausted relief in the mid-1990s. Teams led by Valentine and fellow medic David Ho separately developed similar antiretroviral (or ART) drug cocktails that inhibited the virus’s replication and made AIDS manageable.

Bellevue’s record shines bright amid the shameful behaviour of many in the US medical system around HIV and AIDS. In 1986, with more than 20,000 dead and tens of thousands more infected, the American Medical Association informed its members that it was legitimate to ignore these patients. The United States, Oshinsky notes, continues to ration care according to status and wealth — an ailment that the Obamacare medical-insurance statute salves but does not cure. This year, for instance, conservatives in the US Congress repeatedly sabotaged bills meant to fund the fight against the expanding Zika epidemic which, up to that point in the country, had affected mainly the US territory of Puerto Rico. The funding, requested by President Barack Obama’s administration in February, finally passed on 28 September.

Bellevue is rich in anecdote, history, personality and narrative. It is also an indictment of a society’s failure, almost 300 years on, to extend medical benefits to all, despite the efforts of this extraordinary hospital. ■

David Dobbs writes on science, medicine and culture. His books include *Reef Madness* and the short memoir *My Mother’s Lover*. e-mail: david.a.dobbs@gmail.com

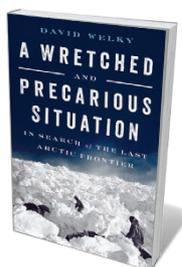
Books in brief



Beyond Earth: Our Path to a New Home in the Planets

Charles Wohlforth and Amanda R. Hendrix PANTHEON (2016)

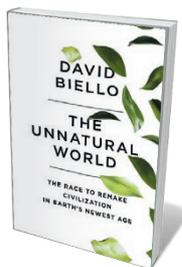
“They will go boating on lakes of liquid methane and fly like birds in the cold, dense atmosphere.” Life on Saturn’s moon Titan could prove exhilarating, suggest writer Charles Wohlforth and planetary scientist Amanda Hendrix in this synthesis of space-colonization science. Their thought experiment balances possible futures with a raft of facts on advances in spacecraft technology, robotics and space medicine. Crucially, they parse the push and pull between cautious governments and gung-ho entrepreneurs, concluding that the two may ultimately add up to a propulsive combination.



A Wretched and Precarious Situation

David Welky W. W. NORTON (2016)

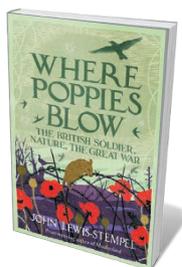
In 1906, polar explorer Robert Peary sighted a mysterious region northwest of Canada’s Arctic Archipelago. Dubbing it Crocker Land, he enlisted anthropologist Donald MacMillan and geologist Elmer Ekblaw as part of a US–Inuit team to explore the landmass under the aegis of New York’s American Museum of Natural History. What happened next, historian David Welky reveals in this engrossing account of the five-year effort (1913–17), involved not only the classic litany of illness, privation and howling blizzards, but a singularly bizarre finding about Peary’s original sighting.



The Unnatural World

David Biello SCRIBNER (2016)

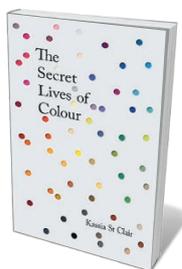
Forget the Anthropocene epoch, argues journalist David Biello. What we need is a broader “Anthropozoic” era, a lasting future anchored in inspired planetary stewardship and intelligent optimism. His lucid survey of researchers straining to contain today’s global environmental shifts (from climate change to dwindling marine biodiversity) mixes their personal scientific journeys with contextualizing discoveries. Among them are marine biologist Victor Smetacek, experimenting with iron fertilization to draw carbon dioxide into the oceans, and ecologist Erle Ellis, monitoring forestation with drones.



Where Poppies Blow: The British Soldier, Nature, the Great War

John Lewis-Stempel W&N (2016)

For traumatized, trench-bound British soldiers caught up in the carnage of the First World War, birdwatching and botany offered solace. So reveals John Lewis-Stempel in this riveting study drawing on verse, letters and field notes by men who served, from zoologist Dene Fry to poet Edward Thomas. He shows how observing the nesting larks that twittered above ‘no man’s land’ and natural cycles such as the seasons gave a sense of renewal, and how animal ‘troops’ were inspirationally loyal. A remarkable picture of a human bloodbath that took place amid phenomenally rich biodiversity.



The Secret Lives of Colour

Kassia St Clair JOHN MURRAY (2016)

Heliotrope, gamboge, umber: the names of colours are as luscious as the hues themselves. Kassia St Clair serves up a chromatic buffet of the chemistry, history and cultural associations of 75 dyes, pigments and shades, including encapsulations of optics and colour theory. The gorgeous, malodorous Turkey red, for instance, was made in a “tortuous process involving rancid castor oil, ox blood and dung”, and the Roman emperor Nero used a large emerald as “proto-sunglasses” while watching gladiatorial combat. **Barbara Kiser**