

than Diebner's more effectual one?

The scientists skirt around the moral issue of building an atomic bomb for the Reich. Heisenberg and the others agree that they did what was necessary to protect the future of German science. Hahn, who never worked on the bomb, says that he loves Germany but is glad that her criminal leaders lost the war. Diebner says that he joined the Nazi party because he needed work.

On the night of 6 August, they listen to the BBC's announcement that the United States has dropped the atomic bomb on Hiroshima. Stunned, they try to figure out how the Allies managed it. Heisenberg calculates that by using 100,000 mass spectrometers, one could separate out enough of the fissile but rare isotope of uranium for a bomb — about a tonne. Hahn is confused: aren't Heisenberg's calculations out by a factor of ten? (They are.)

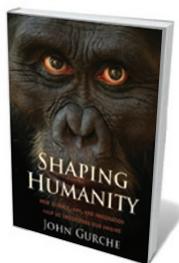
The next day, they read the British newspapers, which brag that the Allies won the atomic race. They are outraged, having thought they were so far ahead that racing was irrelevant. They disagree about whether they were even trying to build a bomb or, as Heisenberg begins to insist, just a reactor. Everybody agrees that the German government kept them too short of funds for success. They write an official memorandum explaining that their efforts were directed towards building a power-producing reactor and that working on a bomb had not been feasible. About five months later, they go home — Heisenberg to the directorship of the Kaiser Wilhelm Institute for Physics in Berlin, and the others also to worthy and interesting jobs. As Cassidy says, they fall from the heights of their arrogance, but not far.

Cassidy's script has had two readings; others are planned, and a Spanish production in Santiago, Chile, is in preparation. Cassidy is expanding his play to two acts. "I don't think I could have picked a more difficult subject for my first play," he says. The difficulty lies in the multiplicity of historical realities that he must cram into one plot that is driven, in effect, by one tension.

The transcript itself holds many tensions: between aristocratic theorists and lower-caste engineers; between those who joined the Nazis and those who just worked for them; between arrogance and wilful blindness; between Heisenberg's great scientific stature and his failure to help a Jewish colleague's family, or indeed his own. Cassidy has Rittner, at the play's end, collapse all the tensions: people who are great in one area, Rittner says, are expected to be — and expect themselves to be — great in all. But in both art and life, they fall. ■

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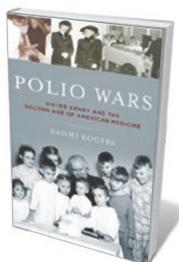
Books in brief



Shaping Humanity: How Science, Art, and Imagination Help Us Understand Our Origins

John Gurche YALE UNIVERSITY PRESS (2013)

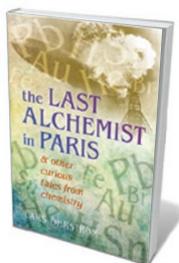
Palaeoartist John Gurche crafts hyperrealistic sculptures of extinct hominins, built up from casts or three-dimensional models of their skeletons. To bring these individuals from deep time to 'life', Gurche fuses his knowledge of comparative anatomy with forensic science and informed guesses about expressions and poses. His coffee-table gem showcases and contextualizes 15 of these finely judged creations, representing a span of 6 million years and ranging from *Sahelanthropus tchadensis* to the 'Hobbit' *Homo floresiensis*.



Polio Wars: Sister Kenny and the Golden Age of American Medicine

Naomi Rogers OXFORD UNIVERSITY PRESS (2013)

Before the Salk vaccine was licensed in 1955, polio epidemics swept the United States. Naomi Rogers traces them through the story of Australian-born 'bush nurse' Elizabeth Kenny, who eschewed splinting in favour of early muscle manipulation. Her star rose, but her methods stirred controversy and she was forgotten with the vaccine's advent. Kenny's principal legacy, Rogers speculates, might be her idea — unacknowledged in the evolution of polio science — that the disease was systemic rather than neurotropic.



The Last Alchemist in Paris: And Other Curious Tales From Chemistry

Lars Öhrström OXFORD UNIVERSITY PRESS (2013)

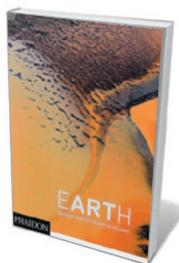
History offers a painless way to grasp the periodic table's 114 confirmed elements, notes chemist Lars Öhrström. So, for instance, we visit Cumbria in northern England, once an "information technology hub" that supplied the graphite used in pencils. And we follow the Swedish playwright August Strindberg as, gripped by psychosis, he set up an alchemical lab in Paris — leading Öhrström to ponder lithium carbonate (used to treat bipolar disorder), as well as gold. There is much more in this charming mishmash of a primer.



Fritz Kahn

Uta von Debschitz and Thilo von Debschitz TASCHEN (2013)

The 1926 *Man as Industrial Palace* is only the most iconic of the images unleashed by infographics pioneer Fritz Kahn. A modernist genius, Kahn's illustrations were endlessly inventive, often darkly comic and occasionally macabre. His 1924 drawing *Travel Experiences of a Wandering Cell: In the Valley of a Flesh Wound*, for example, beautifully elucidates the living landscape of blood, nerves and tissue. In this biography in English, German and French that features 350 of his works, Uta and Thilo von Debschitz pay homage to the half-forgotten artist on the 125th anniversary of his birth.



Earthart: Colours of the Earth

Bernhard Edmaier and Angelika Jung-Hüttl PHAIDON (2013)

Distance lends enchantment to Earth's particoloured, pitted surface, as revealed by this photofest by two geologists, writer Angelika Jung-Hüttl and photographer Bernhard Edmaier. Terrestrial meanders, fractals and waves echo biological forms, and vivid hues remind the reader how earthly muds and minerals yield pigments from yellow ochre to ultramarine. A chance to enter an alternative vision of our planet, from the smoked-glass icebergs of East Greenland to the stupendous lion-coloured reaches of the Chilean Andes. **Barbara Kiser**