► flashpoint came with psychologist Timothy Leary's buccaneering drug experiments that eventually saw him expelled from Harvard University in Cambridge, Massachusetts. In January 1963, Sandoz received an order from Leary for 100 grams of LSD, enough for a million doses. Hofmann referred the request to the US Food and Drug Administration and noted that Leary was courting media publicity "that can only be injurious to the scientific clarification of questions connected with the use of these substances".

Sandoz returned Leary's cheque and in 1966 withdrew LSD from the market, where it had been in steady demand for neurological research and psychiatric use. The vacuum was swiftly filled by underground chemists, who turned out pills and LSD-soaked blotters at strengths that Hofmann considered a massive overdose. But there was no turning the tide.

Hofmann continued to work on the chemistry of ergot alkaloids, on which he became the world's leading authority, and rose to deputy managing director at Sandoz. The next 50 years of his life, as *Mystic Chemist* doggedly relates, was largely swallowed up by a procession of ethnographers, botanists, psychiatrists, shamans and politicians, seeking his wisdom and showering him with honours.

LSD has been many things to many people, but for Hofmann its core message was that objective reality "is in fact a subjective image". By enhancing idiosyncratic perceptions and ideas, it allows us to create our own reality. In Hofmann's case, it returned him to the radiant childhood vision of nature that had led him to study chemistry in the first place. Among his touchstones were the spirit-infused *Naturphilosophie* of author Johann Wolfgang von Goethe, the poetry of Johann Christoph Friedrich von Schiller and Rainer Maria Rilke and the alchemical insights of his Swiss compatriot Paracelsus, all enveloped in a mystical Christian revelation that he was "united with the Creation, as a part of the Universe".

After 42 years at Sandoz, Hofmann retired in 1971 to his alpine home on the Swiss–French border, writing of coming full circle to the high meadows of the Jura Mountains, "with the same flowers, and the same view into the distance". ■

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Wolves are among the species that people are seeking to restore to their former habitats.

ECOLOGY

Into the (re)wild

Shahid Naeem examines the seductive concept of repopulating habitats with locally extinct species.

In his 1901 book *Our National Parks*, early conservationist John Muir asserted that "wildness is a necessity". Environmental journalist George Monbiot agrees, but in *Feral* we discover just how challenging it can be to fulfil that need.

Monbiot starts by recounting his adventures during the 1980s gold rush in the Brazilian state of Roraima, among murderers, desperate miners and the Yanomami tribe's faith healers. Far from showing bravado, these tales reveal how negligence, inaction and greed have led to environmental devastation in the region. After six years, Monbiot returns home to Wales to find himself "living a life in which washing the dishwasher presented an interesting challenge". Burdened with angst, he looks to wilderness as an antidote to a descent into a "small and shuffling life".

But Monbiot finds that Wales has been tamed by forces

similar to those that are devastating the Brazilian wilderness. He uses his home territory as a microcosm to explore 'rewilding' — the process of reintroducing locally extinct species — and elevates this from a paradigm in conservation science to a major environmental issue. He goes even further, envisioning rewilding as a way to revitalize imprisoned human sensibilities by restoring the endless source of delights, surprises, adventures and thrills that wilderness provides.

Rewilding seems simple: let jaguars roam the American West and rhinos repopulate the Nepalese–Indian border, or allow wolves, lynxes, wildcats, wolverines, beavers, boars and even moose to return to Wales. Yet Monbiot discovers that rewilding is not a straightforward process.

For a start, which species should be prioritized? Some were hunted to extinction not long ago — for example, boars in the thirteenth century. Others, such as moose and wolverines, disappeared thousands of years ago for unknown reasons. Should we go back to the Pleistocene epoch (which ended some 12,000 years ago) and use

Feral: Searching for Enchantment on the Frontiers of Rewilding
GEORGE MONBIOT
Allen Lane: 2013.
336 pp. £20

KEN CANNING/GETTY

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For more from Shahid Naeem on redefining the wild, see: go.nature.com/pmrusq

African substitutes to bring back the hippos, rhinos, hyenas, lions and elephants that once populated Europe? Who bears responsibility if released animals introduce disease, damage crops, attack pets, kill livestock or maul humans?

And how do we define the 'wilderness' on which rewilding is based? Monbiot fails to do so, yet is exasperated by policies that designate sheep pasture as 'wilderness' or promote tree removal as 'wilderness management'.

In *The Idea of Wilderness* (Yale University Press, 1991), philosopher Max Oelschlaeger notes that the concept did not arise until humanity began to imagine itself as distinct and insulated from nature. Wilderness became those vestiges of our dominion that await clearing. To combat this definition, many conservation arguments now have a utilitarian perspective, portraying wilderness as habitat that serves humanity in ways that farms, pastures and plantations cannot. Wild areas prevent soil erosion, provide homes for pollinators and act as sources of food, medicine and more.

Whatever the motivation, some feel that rewilding could re-energize conservation science. Wildlife biologist Tim Caro, for instance, sees the process as galvanizing a science "of documenting population declines, species losses and habitat destruction in excruciating detail but sadly doing little about it". Caroline Fraser's *Rewilding the World* (Metropolitan Books, 2009) and Dave Foreman's *Rewilding North America* (Island Press, 2004) echo this idea. Monbiot, however, sees the prime purpose of rewilding as a cure for ecological ennui.

At one point, Monbiot sets out to sea in his kayak to catch a longfin tuna, a fish reported to be returning to the region. The weather unexpectedly turns lethal, but Monbiot survives to reflect on what he describes as the idiocy of being lured into such danger and neglecting his duty to his daughter and partner. His repentance is short-lived, and another adventure soon tempts him back to nature.

Monbiot's prowess at wild fishing is as impressive as the fact that he survived cerebral malaria, beatings by military guards and being stung into a coma by wasps. But *Feral* made me uncomfortable. Rewilding is too often misconstrued by the public as a science by and for animal lovers and thrill-seekers. Although Monbiot covers the issues admirably, his passion for peril could confuse the central value of rewilding. The subject may be a cure for ecological boredom, but its power to invigorate the imagination needs to be tethered to the goal of attaining a more robust future for us and our fellow species. ■

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Books in brief

Farewell to Reality: How Fairytale Physics Betrays the Search for Scientific Truth

Jim Baggott CONSTABLE 352 pp. £12.99 (2013)

"What evidence do we have for super-symmetric 'squarks'?" asks science writer Jim Baggott, bemoaning the untestable speculative theories of theoretical physics. But this is more than an energetic drubbing of them. Baggott thoroughly analyses the cracks in the authorized version of reality (such as the disjunct between quantum theory and general relativity) and equally problematic explanations, such as superstring theory. The big questions, he argues, demand context-awareness, and the courage to make doubts public.

Hans Christian Ørsted: Reading Nature's Mind

Dan Charly Christensen OXFORD UNIVERSITY PRESS 768 pp. £39.99 (2013)

Charles Darwin may have found Hans Christian Ørsted's philosophical tract *The Soul in Nature* "dreadful", but the nineteenth-century Danish physicist and chemist discovered electromagnetism, kicking open the door for Michael Faraday, James Clerk Maxwell, and a sprawling technoscape of invention. In this powerhouse of a biography-cum-science-history, historian Dan Charly Christensen reveals Ørsted as a brilliant, multifaceted figure — scientist, post-Kantian philosopher, educator and physical aesthetician.

Scatter, Adapt, and Remember: How Humans Will Survive a Mass Extinction

Annalee Newitz DOUBLEDAY 320 pp. \$26.95 (2013)

Ever since the 'Snowball Earth' glaciations 2.3 billion years ago, life has squeaked through mass extinctions. Annalee Newitz examines how humans might survive the next one. Skipping through catastrophe research, she then explores how *Homo sapiens* has survived plagues, famines and more — harnessing everything from basic adaptability to pandemic surveillance and geoengineering. Together these tools and abilities are, notes Newitz, indicators of our phenomenal capacity to survive the unthinkable.

The Summits of Modern Man: Mountaineering After the Enlightenment

Peter H. Hansen HARVARD UNIVERSITY PRESS 392 pp. \$35 (2013)

In this treatise on peak bagging and its post-Enlightenment significance, Peter Hansen unearths stories with a crampon-like grip. We meet star summiteers such as Michel-Gabriel Paccard and Jacques Balmat, who both ascended Mont Blanc in 1786; nineteenth-century 'golden age' alpine mountaineers like physical scientist John Tyndall; and Edmund Hillary and Tenzing Norgay on Everest. But with today's retreating glaciers, Hansen reminds us that the idea of what it means to 'conquer' nature needs reconfiguring.

Consolations of the Forest: Alone in a Cabin in the Middle Taiga

Sylvain Tesson (translated by Linda Coverdale) ALLEN LANE 256 pp. £16.99 (2013)

Six months in a hut on the shores of Siberian "cauldron of evolution" Lake Baikal spawned Sylvain Tesson's vivid memoir, part meditation on stupendous nature, part psychological experiment. This is total immersion in the seasonal minutiae of an extreme environment. Raw joys abound, from encounters with solitude-crazed meteorologists and foraging bears to the illumination of cracks in the mighty lake's ice and the interiorities of his own musing mind.