

## SCIENCE LIVES

# How shall we save the planet?

A techno-optimist is pitted against the pied piper of “apocalyptic environmentalism”

By Tyler Priest

Charles Mann’s fascinating new book, *The Wizard and the Prophet*, is about two pivotal but largely forgotten men of science, Norman Borlaug (1914–2009) and William Vogt (1902–1968). His inspiration, however, originated with two members of the opposite sex: his infant daughter and a former neighbor, the famous biologist and evolutionary theorist Lynn Margulis. “When my daughter is my age, almost 10 billion people will be walking the earth,” he calculated. “How is *that* going to work?” The mischievous Margulis liked to compound Mann’s worry by telling him that *Homo sapiens*, like other “briefly successful species,” was biologically destined to multiply beyond its material limits before collapsing into extinction.

An inquisitive and gifted science writer, Mann is the author of previous bestsellers, *1491* and *1493*, which reappraised the ecological dimensions of human development in the Americas before Columbus and around the world after him. In *The Wizard and the Prophet*, Mann turns his gaze on the recent past and near future to see whether the human species can continue its improbable run of success. His chief subjects were visionaries “shouting from the edge of the petri dish” who had fundamentally different ideas about how to avert a planetary crisis.

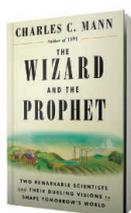
The prophet Vogt, son of German immigrants living on Long Island and a self-taught ornithologist and zoologist, crusaded for population control and aggressive restraints on human consumption. He rose through the bird world to become editor of the Audubon Society’s *Bird-Lore* in 1934 and later served as conservation chief of the Pan American Union and national director of the Planned Parenthood Federation of America. A confidant of Aldo Leopold and Julian Huxley, whose eugenicist tendencies he shared, Vogt vaulted to international fame with his 1948 bestseller, *Road to Survival*, in which he raged against “excessive breeding and abuse of the land.” Humans, he warned, would

soon “feel the chill of scarcity’s damp breath.” Mann casts Vogt as the central figure of mid-century “Malthusianism” and pied piper of “apocalyptic environmentalism,” whose ideas influenced Rachel Carson and Paul Ehrlich.

The wizard Borlaug, grandson of Norwegian immigrants from the tiny Iowa farming town of Saude, was a nose-to-the-soil plant pathologist who believed that the application of science and technology could liberate humans from the shackles of nature. After World War II, he worked with the Rockefeller Foundation’s Mexican Agricultural Program to crossbreed wheat varieties that could resist stem rust and boost yields. Years of painstaking experiments eventually produced enough wheat from new superseeds to fend off starvation in Mexico, India, and other impoverished parts of the world. Borlaug’s starring role in the “Green Revolution,” which was widely credited with saving tens of millions of lives, earned him the Nobel Peace Prize in 1970.

Mann tells the stories of Vogt and Borlaug with verve and suspense. The two men met each other once, briefly, in Mexico in 1946, and neither was impressed with the other. Upon seeing what Borlaug was up to, Vogt urged the Rockefeller Foundation to halt it.

Particularly revealing is the poignant tale of Vogt’s 4 years (1938–1942) on the desolate



## The Wizard and the Prophet

Charles C. Mann  
Alfred A Knopf, 2018.  
629 pp.

and noxious guano islands off Peru studying the declining populations of the guany cormorant, an experience that reinforced his conviction that all species were bound by hard ecological limits. Equally engrossing are Borlaug’s desperate maneuvers in 1965 to ship more than 500 tons of high-yielding seeds from Mexico through Los Angeles during the upheaval of the Watts riots and then on to India and Pakistan, which were at war with each other over Kashmir.

The achievement of *The Wizard and the Prophet* goes beyond detailing the accomplishments of these two individuals. With his trademark interdisciplinary wisdom, Mann travels the globe to visit other wizards and prophets working on the world’s most challenging environmental problems: organic farming versus genetic manipulation in a section on “Earth: Food”; sewage recycling versus aqueducts and desalination in “Water: Freshwater”; centralized versus decentralized forms of energy delivery in “Fire: Energy”; and the race between decarbonization and geoengineering to fight global warming in “Air: Climate Change.”

The visions of Vogt and Borlaug do not have to be mutually exclusive, but most solutions to our toughest dilemmas lean toward one or the other. So where does Mann stand? Readers will have to interpret his conclusion for themselves.

After describing the progress modern humans have made in formally abolishing slavery, alleviating the subjugation of women, and reducing violent death and deprivation, Mann shudders to think that we “have the imagination to see our potential end, but [do] not have the cultural resources to avoid it.” The power to do both is what distinguishes us from the “protozoa in the petri dish.” ■

10.1126/science.aar2447



Lab-grown burgers, like this one created by Mark Post at Maastricht University, may one day be the norm.

## PODCAST

### Clean Meat How Growing Meat Without Animals Will Revolutionize Dinner and the World

Paul Shapiro

Gallery Books, 2018. 256 pp.

As the demand for meat increases and concerns about industrial animal agriculture mount, the need to create a safer, more efficient system of meat production has become urgent. This week on the *Science* podcast, Paul Shapiro describes how tiny tissue samples may one day be used to generate healthy, humanely produced meat. [sciencemag.org/podcasts](http://sciencemag.org/podcasts)

10.1126/science.aas8716

# Science

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*Science* **359** (6374), 399.  
DOI: 10.1126/science.aar2447

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