

The Dirt Trilogy — David R. Montgomery

Rachel Ameen · *Gulf of Maine Institute Journal*, Fall 2022

When geomorphologist Dave Montgomery set out to study rocks, he had no idea he would one day write about agriculture, ancient history, food production, bacterial life, and human health. He just followed the evidence the ground provided enthusiastically and with an open mind, revealing connections both new and old between the worlds above and within the ground. This review spans three of Montgomery's books, informally known as The Dirt Trilogy: *Dirt: The Erosion of Civilizations* (2012), *The Hidden Half of Nature: The Microbial Roots of Life and Health* (2016) and *Growing a Revolution: Bringing Our Soil Back to Life* (2018). Each book can stand alone, but Montgomery's eventual argument—for the mindful and area-specific stewardship of the soil—develops organically across all three.

In *Dirt: The Erosion of Civilizations*, Montgomery takes us on an interdisciplinary tour through history. *Dirt* is making the case for dirt, why caring about dirt is so important, and the dire consequences of not paying enough attention to the ground. Beginning with the earliest known evidence of agriculture—in the Zagros Mountains (modern day Iraq/Iran) and then, along the banks of the Euphrates River (modern day Syria) some 10,000 years ago, Montgomery argues that farming was not a natural result of cultural evolution but rather, a desperate response to climatic glaciation. Per calorie, cultivation is far more labor intensive than sedentary hunting or gathering, and was not a voluntary endeavor at first. Agriculture was initially a survival tactic: “When bad times came, as they inevitably did, chance favored groups with experience tending gardens. They better endured hardships and prospered during good times. And agricultural success upped the ante” (*Dirt*, 34). Agriculture supported increased population levels, which in turn led to territorial success. Combined with the domestication of farm animals sometime between the years of 10,000 and 6000 BC, agriculture became a dominant cultural power.

Farming did not come without its risks: a single bad season could starve huge portions of the population. Time and practice revealed that aggressive cultivation (especially with tools such as plows) erodes soil, turning once fertile fields into dust. Time and time again, Montgomery chronicles how the erosion of fertile soil through agriculture has contributed to the downfall of major civilizations across history. Through a combination of geology, history, anthropology, and agro-ecology, *Dirt* builds a compelling-if-repetitive case for regional, sustainable long-term soil stewardship. *Dirt* is waving a warning flag. Montgomery shows the historical consequences of a cycle we are well on the way to repeating, in the United States and across the world.

Montgomery is joined by his wife and coauthor, Anne Biklé, for *The Hidden Half of Nature: The Microbial Roots of Life and Health* in an exploration of the unseen universes of bacterial life existing within our soil and within ourselves. As the title suggests, Montgomery and Biklé connect the health of our bodies to that of the dirt through chapters chronicling the foundations of

bacteriology, the invisible symbiosis between fungi and soil, and the deep roots of cancer and plants. While it is easy to get lost in the microbial and cellular details, *The Hidden Half of Nature* is interspersed with historical context and is driven by captivating storytelling and powerful personal narratives. It is a book that makes you want to go out and garden and to bury your hands in dark soil. At times, it reads like a microbiology textbook, a personal memoir, an ode to nature, an almanac, and a gardening guide. Overall, it is a book filled with life and hope and how we are all connected to the earth one way or another.

Growing a Revolution: Bringing Our Soil Back to Life explores global farmers efforts to fix their dirt, taking a strong stance against one of the staples of modern agriculture: plowing. Montgomery shows how eons of traditional agricultural knowledge, ideas enshrined in the practice of ‘conventional’ agriculture, lead to soil degradation and erosion, amongst other problems. As in *Dirt*, *Growing a Revolution* combines character-based storytelling, focusing on success stories of restorative agriculture, with the larger scientific and global narrative. Each chapter follows an agricultural pioneer, explaining the background and science behind their growing success: Kofi Bao’s drip irrigation, minimal soil disturbance, ground coverage and biodiversity rich fields in Ghana; Gabe Brown’s biocentric cover cropping and intensive grazing in North Dakota; and Art Donnelly’s clean biochar and Felicia Echeverría’s waste reuse and microbial biofuel system in San Pablo. All these farmers share a common mission—to restore and maintain the health of their soil—but apart from their ubiquitous rejection of tilling, employ a place-based approach to their agriculture. *Growing a Revolution* can’t accomplish everything in a single publication, but this book is a doorway into the world of regeneration agriculture and soil practices.

The solutions oriented *Growing a Revolution* is a much-needed counterpart to the historical exploration of *Dirt* and the microbial analysis of *The Hidden Half of Nature*. Taken together, they span thousands of years, drawing on evidence from the distant past and practices from the present to make the compelling and cohesive case for soil stewardship. They show not only the mistakes of prior farming civilizations, but also tangible modern solutions. To save our soil, a long and deeply engrained history of agricultural malpractice must be overthrown. But we can and will save our soil, Montgomery argues, because we must. There really is no alternative to good dirt.

This year, Montgomery and Biklé released a new book together: *What Your Food Ate: How to Heal Our Land and Reclaim Our Health*, in a continuation of their work connecting soil, agriculture, health, diet, and current practices. These connections are relevant to all of us, and these books demonstrate the timely nature of environmental stewardship above as well as below.

Rachel Ameen began her work with GOMI in 2019, first as an intern, and then as Program Coordinator and a member of the Board of Directors and the Journal’s Editorial Board. Native to New England, Rachel has a background in political science, public health, and environmental studies. She received a Master’s in Marine Affairs from the University of Washington and is currently a doctoral fellow in Syracuse University’s Department of Geography and the Environment. Her research revolves around animals, recreation, and tourism in the

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