ALTERED EARTH

Altered Earth aims to get the Anthropocene right in three senses. With essays by leading scientists, it highlights the growing consensus that our planet entered a dangerous new state in the mid-twentieth century. Second, it tries to get the Anthropocene right in human terms, bringing together a range of leading authors to explore, in fiction and non-fiction, our deep past, global conquest, inequality, nuclear disasters, and space travel. Finally, this landmark collection presents what hope might look like in this seemingly hopeless situation, proposing new political forms and mutualistic cities. "Right" in this book means being as *accurate* as possible in describing the physical phenomenon of the Anthropocene; as *balanced* as possible in weighing the complex human developments, some willed and some unintended, that led to this predicament; and as *just* as possible in envisioning potential futures.

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Getting the Anthropocene Right

Edited by

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In memory of Paul Crutzen (1933–2021)
and in honor of Christof Mauch and Helmuth Trischler

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Foreword

What makes this collection of powerful and imaginative writings on the Anthropocene a timely, critical, and much-needed intervention in contemporary debates on the topic is its overall intellectual ambition. Taken together, the essays assembled here seek to situate these debates on a shared understanding of our planetary challenge while taking care at the same time to nurture a democracy of voices by sustaining multiple approaches to "the Anthropocene." They represent different genres of writing, ranging from the fictive to the scientific. The authorial strategies they deploy are visibly different. Radically different kinds of sources undergird the propositions they put forward. "Not even our citation styles are same," remarks the editor, pointing out that that is indeed something the volume does not even "try to mask." But there is a "common denominator" the essays share, and that is their "shared respect for scientific evidence." All contributions to this volume accept as foundational the basic findings of Earth System science and those of the Anthropocene Working Group of the International Commission on Stratigraphy.

I cannot overemphasize the importance of this stance. A generalized suspicion of science has dogged the idea of the Anthropocene from its very inception, especially in the interpretive human sciences. Some have expressed the fear, for example, that allowing scientists to define the physical parameters of the problem will lead inevitably to techno-fixes, undermining the possibility of democratic action involving citizenly and popular participation. Still others have famously taken exception to the use of the term "anthropos" in naming the new geological epoch, "the Anthropocene." Their claim, familiar by now, is that it projects an

undifferentiated picture of humanity ("anthropos") that is oblivious of all the anthropological inequalities of race, class, gender, caste, sexuality, and thus the name "Anthropocene" diverts attention away from the "real" cause of our problem, which they define not as the Anthropocene but as global warming. The single cause of this crisis, they say, is the rapacious and extractive capitalist economy that catches us all in its web. While this criticism was first voiced about ten years ago, it has an enduring appeal to scholars in the social sciences, as may be seen in a 2021 call for papers issued by the respected American journal, *Radical History Review*, for a special edition to be called, significantly, "Alternatives to the Anthropocene." A "technocratic, scientific definition of our current epoch," argue the editors of this special issue, has "limits" when it comes to "periodizing" and understanding "the last 500 years [and] the social movements that have challenged the extractive capitalism essential to this epoch." They seek contributions that would "contest dominant readings of the Anthropocene as a post-1800 phenomenon and . . . [center] environmental history that examines the beginning of the era of European colonial expansion." While this is but a single example, it demonstrates the reluctance of many humanistic and social scientists to even consider whether a transformed planet might transform our questions and narratives about the human past.

The debates on the Anthropocene have been ideological, partisan, and sometimes acrimonious and divisive. This volume strikes a very different note. It does not deny the role of capitalism and inequality in our current environmental crisis. But it does not see the sciences and the humanities as engaged in a mortal combat over the meanings and power of truth. The editor and contributors here visualize and stage generative conversations across disciplines in a spirit of mutual respect. They may disagree on how to make human sense of the Anthropocene, but they take stratigraphy and Earth System science as providing them with their various starting points. They see the Anthropocene as a much larger phenomenon than either climate change or loss of species, though the latter two are included in their understanding of the Anthropocene. But they all concede that the planetary problem of the Anthropocene owes its first formulation to the work of Earth System scientists. The Earth has seen warming events and biodiversity loss at various points in its history,

even when there were no humans around to either experience or explain the phenomenon. One can also imagine cultures today where experiences of extreme "natural" events receive explanations that are not rooted in the physical or life sciences. But clearly, we would not have the framework of the Anthropocene to think with if we did not already have the markers (such as the Holocene) that scientists use in dividing up the inhuman stretches of geological time.

The multidimensional and planetary environmental crises that the world faces today call for conversations across different branches of human knowledge and imagination. That is what this volume sets out to achieve. I very much hope that this brave and timely book will meet with the positive reception that it so richly deserves.

Dipesh Chakrabarty
University of Chicago

Acknowledgments

Writing acknowledgments is my favorite part of any project. Casting an eye back on all the helping hands, false starts, brilliant disagreements, and energies behind a book is always a delight, but because this volume is unusually multidisciplinary and multicultural, the thanks are more manifold than usual.

The *primum movens* of this project was the Rachel Carson Center for Environment and Society, piloted by its remarkable directors, Christof Mauch and Helmuth Trischler. In the fall of 2019, Christof and Helmuth invited Jan Zalasiewicz and myself to Munich to speak as part of the celebration of the RCC's tenth anniversary, along with the remarkable environmental historian Jane Carruthers. Afterward, editor Harriet Windley skillfully ushered our lectures into print as *Strata and Three Stories*, with the able assistance of Kristy Henderson. Our tandem perspective on the Anthropocene became the final volume in the *RCC Perspectives: Transformations in Environment and Society* series. It built on earlier work in that series, including Christof Mauch's *Slow Hope: Rethinking Ecologies of Crisis and Fear* and Helmuth Trischler's *Anthropocene: Exploring the Future of the Age of Humans*. This book is dedicated to them for their institutional vision and intellectual contributions to the field of environmental history.

Shortly after the RCC celebration, I met with Lucy Rhymer, editor extraordinaire at Cambridge University Press. Over coffee, our conversation first plunged into darkness about our environmental future, but then resurfaced into light with the hope of this book. This hope is that a shared understanding of the Anthropocene can form the basis for the new ways of mutualistic living envisioned in the final collaborative

chapter, spearheaded by paleobiologist Mark Williams. With Lucy's encouragement, I set out to bring together the many sciences and stories of our damaged Earth System and to find contributors willing to cross disciplinary lines and speak generously with one another and to our readers. Another star Cambridge editor, Rachel Blaifeder, shouldered some of the work of moving the book forward while Lucy was on leave. Natasha Whelan guided the production process with elegant firmness. Jo Tyszka did an extraordinary job with the copyediting. My heartfelt thanks go to Lucy, Rachel, Natasha, Jo, Michael Watson, and the whole Cambridge team. I also had a lot of fun working with freelance editor Maren Meinhardt whose wit, skill, and friendship kept me buoyant throughout. Publishers and editors don't get nearly the credit they deserve for shaping our intellectual landscape.

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While we were finishing this work, Paul Crutzen died on January 28, 2021. Many of the contributors here knew Paul, the atmospheric chemist who famously coined the term "Anthropocene" in 2000. They celebrate his life and mourn his death. Even those of us who never got the chance to meet him are profoundly grateful for his research on the dangers of the ozone hole (for which he won the Nobel Prize) and for instigating the vital way of understanding Earth that we explore here.

This volume was supported by the Liu Institute, the Institute for Scholarship in the Liberal Arts, College of Arts and Letters, and a Recovery and Resilience Grant, all at the University of Notre Dame, and I owe special thanks to my colleagues there, Michel Hockx and Patrick Deegan. My greatest thanks of all goes to the contributors whose spirit of adventure and goodwill matches their insights in this book. They are good company on a troubled planet.