



Anthony N. Penna, Jennifer S. Rivers. *Natural Disasters in a Global Environment*. Chichester: Wiley-Blackwell, 2013. 360 pp. \$34.99, e-book, ISBN 978-1-118-32754-8.

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Commissioned by Margaret Sankey (Air University)

Natural Disasters in a Global Environment offers students an introduction into the exciting yet frightening world of volcanic eruptions, landslides, floods, and other historical catastrophes. The work will be of the most benefit to students who have little background knowledge of natural disasters and are interested in studying a single case study. Each chapter is filled with all the relevant information on a given type of catastrophe along with captivating excerpts of personal accounts of specific disasters. Unfortunately there are some serious issues with the work which affect its overall quality.

The work is divided into three major sections detailing types of disasters that start below the earth's core and move upward. Part 1, "Internal Processes," discusses super volcanoes, earthquakes, and tsunamis, covering an enormous period of time, from the Mount Toba eruption seventy-three thousand years ago to the more recent Tōhoku Japan tsunami in 2011. Part 2, "Surficial Processes," brings the focus to events that have their origin at the earth's surface: fires, floods, landslides, and pandemic disease. The majority of disasters in this section come from the twentieth century with the addition of the fires in Rome (68 CE), London (1666), and Chicago (1871), along with the bubonic plague (1347-51). The final section, part 3, "Atmospheric Processes," examines

such disasters as hurricanes, cyclones, typhoons, famines, draughts, and meteorite impacts. The majority of these studies focus on modern examples as well, except for the meteorite section which stretches back to impacts dating sixty-five million years ago along with more current examples and a discussion of meteorites that might strike the earth in the future.

In total there are ten chapters that detail a specific type of disaster. Each includes an introduction describing the causes of the catastrophe, along with several case studies and a summary. For example, the chapter on floods begins by discussing why humans developed a habit for settling near bodies of water and why this means that floods are currently the most fatal of all the natural disasters. This short overview is followed by examinations of the Central China flood (1931), Dutch flood (1953), and the Bangladesh floods (1997-98). The chapter closes with a summary that highlights current trends and future difficulties with flooding rather than a recapitulation of the case studies in the chapter. Students will no doubt find the individual chapters filled with interesting detail and personal narratives of the tragedies.

In terms of the positives, each chapter does well blending the scientific underpinning of each catastrophe with the general course of events. This mixture will give students a more holistic un-

derstanding of the natural processes and human responses to natural disasters. The authors did well unearthing some truly interesting details that will captivate the reader. For instance, the Krakatau eruption (1883) in the Pacific literally ripped an entire island apart and some firestorms, such as the London fire, generate as much power and devastation as an atomic bomb!

Unfortunately there are some real weaknesses with the work. First, the work appears rather rushed and the authors were not well served by their editors. For instance, the chapter on pandemic diseases includes a section titled “The Bubonic Plague (1347-51 and After)” which begins with a discussion on the Justinian plague in 540 BCE. This event can hardly be considered “after,” and it is not until the middle of the section that it is made clear that the Justinian plague is bubonic and thus related to the black death of the Middle Ages. This type of introductory information is vital for students. The discussion of the infecting flea agent, *Xenopsylla cheopis*, and the associated bacteria *Yerinia pestis* is similarly confusing.

A glossary with the key terms would greatly improve the work and help to avoid confusion. Even the dating of some of the events is puzzling as the acronyms BCE (before the Common Era), CE (Common Era), BP (before the present), and MYA (million years ago) are used throughout without using the full title. Similarly, it is not until chapter 3 on tsunamis that the Moment Magnitude (M_w) is discussed, which is a global scale for earthquakes as opposed to the Richter Scale only designed for use in California. Why not use the same scale throughout? Inconsistencies and unexplained key terms such as these make it difficult for the reader, especially since this is an introductory work on the subject.

The second issue is that many of the broader implications of these disasters are only treated superficially. The majority of the case studies in this work follow a formulaic approach almost to a fault. The scientific background and processes of

the catastrophe are explained before moving onto a discussion of the relief efforts and the rebuilding process. Unfortunately these case studies can be emplotted in the same metanarrative category of tragedy. Undoubtedly part of this comes from the subject matter, but the approach becomes repetitive: crisis strikes, widespread devastation, people respond with varying levels of success. At several points, the discussion partially breaks out of this trope with brief allusions to the ramifications of these disasters. The chapter on earthquakes contains several notable examples. For instance, the earthquakes in San Francisco (1906) and Kanto, Japan, (1923) both involved a governmental change in approach to disasters and military intervention in relief efforts. The former involved a shift away from laissez-faire relief efforts while the latter involved the reaffirmation of traditional Japanese values. These two natural disasters offered a great opportunity to explore an important theme in this work. Unfortunately they are left unexplored as comments such as these are made almost in passing, and are lost among the minutiae of other details.

The introduction and conclusion to the work offer little in terms of putting these catastrophes in a broader context. The introduction in particular needs considerable revision. The historiographic section, “The Global and Environmental Basis for this Book,” does little beyond listing a few works on global and environmental history. The intent of this section was to justify using the terms “global” and “environment.” Is this justification necessary? In terms of providing context for the work, they attempt to place each disaster within the framework of “cultures at risk” (p. 8). Unfortunately, most of the case studies end with the eerily prophetic warning that living in a specific location is dangerous, but the work offers few solutions or a way forward.

Relatedly, the third and final issue with this work is that some of the chapters suffer from factual errors and superficial research. The section

on the Dutch flood is the most striking example. The majority of this section is based on a seemingly cursory reading of Herman Gerritsen's article, "What Happened in 1953?" His article clearly states that "in the early twentieth century, this system of polder boards or water boards ... still functioned as it had for centuries." [1] The book under review, however, notes that the Dutch government created "polder boards" in the twentieth century. These polder boards had been in existence since the Middle Ages, and although their functions and processes varied over time and location, they were hardly a twentieth-century creation.

These issues all suggest that the work was rushed to publication, which is unfortunate. The critiques in this review are not meant to be overly critical, but rather to help improve an important and necessary scholarly contribution. Disasters like the ones discussed in this book are a significant part of our shared global past. They are not adequately studied and global climate change will likely see them increase. Interdisciplinary studies such as these are vital for putting these catastrophes in context and suggesting ways forward. I would gladly welcome a second and updated edition.

Note

[1]. Herman Gerritsen, "What Happened in 1953? The Big Flood in the Netherlands in Retrospect," *Philosophic Transactions of the Royal Society* 363 (2005): 1273.

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