Brian Fagan. *Floods, Famines, and Emperors: El Niño and the Fate of Civilizations*

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Our ongoing study of civilizations seems to be reaching "outside the box" of history and literature. Increasingly the newest important works—such as Jared Diamond’s *Guns, Germs, and Steel* and Keys’ *Catastrophe* (both of them reviewed by me for CCR)—have incorporated serious science to explain historic events. I would like to add Brian Fagan’s new work, *Floods, Famines, and Emperors*, to this list.

Fagan has written extensively on pre-Columbian history, most of which depends upon the work of archaeology because New World cultures did not have much by way of written records. He has also spent time in Egypt and Mesopotamia in archaeology digs, which provided him with a good comparison with the New World societies that he explored. I used his book *Kingdoms of Jade, Kingdoms of Gold*, as the best and most accessible text on Native American empires for an undergraduate World History course.

The book being reviewed here goes beyond archaeology and introduces us to the great global climatic systems that are increasingly affecting our lives. Before we had a global civilization, it was difficult for people in one part of the world to know what was going on in another part. A volcanic eruption in Java was the unknown cause for several years of no summer (and famine) in northern Europe. Nor did people in India or Africa suffering from failure of their monsoons to arrive know anything about the great oceanic cycles that we have now named “El Nino” or “La Nina.” Our ancestors, when confronted with climatic disasters, were compelled to attribute them to the will of the gods—or, as in today’s Central African Republic, to the malevolence of witches.

Fagan provides an exceedingly useful and fascinating overview of the oceanic effects on climate, global warming, global cooling, and how these great natural systems have shaped human history. Empires have risen and collapsed, largely because of relatively rapid changes of climate caused either by oceanic systems, the oscillation of the earth, or (as Keys says) from catastrophic volcanic activities.

Fagan begins his book with our fairly recent awareness of the El Nino cycles which affected world climate just a few years ago. Disastrous floods in South America and California and equally disastrous droughts in Africa and India forced us to see this oceanic system as global. He then shows how a great industry in South America, the
Guano business (sea bird droppings that were exceedingly effective as fertilizers) boomed and then collapsed when the oceanic currents warmed and then cooled.

He then charts the effects of the oceanic warming and cooling on the atmosphere and on winds. "We live in a world of seething air, which flows around us in a state of constant change," he tells us. We take for granted the hurricanes, tropical cyclones, searing desert winds, and months of steady trade winds. These atmospheric systems constantly change and have an effect on the success or the failures of our enterprises and indeed, on our very lives themselves.

The Northern Atlantic Oscillation is a system that governs the currents of water, warm and cold, that travel from the tropics to northern Europe. Without the Gulf Stream, that current of warm water, Northern Europe would have the climate of Siberia. If anything happens to that current, Europe may again have such a climate. Periodically the current shifts, and we see violent weather incidents.

The second part of his book charts the effects of El Ninos in antiquity. Fagan looks at the warming phase that launched civilization, and those climatic catastrophes that brought down Pharaohs in Egypt, the Moche Lords on the Pacific coast of Peru, the classic Maya collapse, and the disappearance of the Old Ones (the great Pueblo civilization in the American southwest).

His observations of the correlation between the Egyptian Old Kingdom Nile flood rates and political thriving or collapse provides a standard by which to observe modern Egypt. The Nile flood rates are at their lowest today, and their population at its highest. Can disaster be far behind?

Knowledge of the most ancient culture of Peru, the Moche culture, is recent and is the result of archaeological discoveries of artifacts in gold that indicate a high culture. The rise and complete collapse of this culture can be correlated with the great El Nino patterns that can be seen today as well. Torrential rainfall and landslides in areas that usually see no rainfall for years at a time are both ancient and modern phenomena.

The Sahara Desert winds are one other great engine in the global climate system. These winds interact with other air and water systems of the planet, affecting human life. Today's famines in Africa result from climate changes, desertification, and an exploding population living already at subsistence level.

The last part of his book examines climate change and the stream of time. He looks at the Little Ice Age during Europe's medieval peri-
od, the droughts that followed the plow, El Ninos that shook the world, and his conclusions on the fate of civilizations.

"The NAO [North Atlantic Oscillations] and ENSO [El Nino Southern Oscillations] are two parts of a single, complex world climatic system. This climatic system oscillates on many time scales, confronting humanity with unusual and challenging weather at every season of the year. These oscillations—hot and cold, wet and dry, have always forced humans to adapt to rapid climatic change." He notes that when we were few in number, we could move away and save ourselves. When we are many and married to our locale, we lack the flexibility to meet these challenges.

Fagan does not attribute global warming exclusively to human activity. The value of this book is to show us the interaction of climate changes or catastrophic events with human responses—both wise and foolish. We may be hastening the advent of global warming, but the system is much bigger than we are. Nonetheless, knowledge of how these systems work and what we can do to survive their worst depredations is essential to our survival.

Obviously the population explosion that has burgeoned over the past 400 years has consequences. Fagan notes that those underdeveloped regions in which too many people live too close to disaster anyway will, and are, suffering from global climate changes right now. If enough people heed this message, we could prioritize and mandate population control globally. We either do it voluntarily or El Nino will do it for us.

—Laina Farhat-Holzman