

## Weather's Greatest Mysteries Solved!

By Randy Cerveny. 2009. Prometheus Books, 59 John Glenn Drive, Amherst, New York 14228-2197 USA. 328 pages. 26.98 USD, Cloth.

This book's catchy title attracted me to review it, but the title misrepresented the content. The book was written for the curious, and specialists will find it useful for a few references. It was easy to read, and most readers will find in it something new.

Most issues discussed related to "climate", not "weather", though half a chapter was devoted to distinctions between these terms. Several events discussed do not qualify as "greatest" by any objective criteria. Some issues discussed were not "solved" (yet). Others that seemed mysteries, before they were studied, had been partly explained for decades. The author admitted that some "solutions" may be changed as more information becomes available — hardly "mysteries solved". The title seemed created as a sales gimmick, that the author accepted — to get the book published, and sold?

Major (prehistoric) events such as the asteroid collision at the Cretaceous/Tertiary transition disrupted weather and climate patterns around the Earth, far beyond those of the impact. That event and its aftermath were treated more fully, for similar readership, in *The Eternal Frontier* (T. Flannery, 1999 — not cited by Cerveny).

- The "bottleneck" in human evolution 73 000 years ago (newly proposed in the 1990s), from a prolonged "winter" caused by loss of solar energy input, following eruption of supervolcano Toba, similar but much larger than those of Tambora in 1816, and Drakatoa in 1883.

- A disastrous famine and disease (documented by Romans, but unexplained) that ravaged the Mediterranean around 536 A.D. also correlated with sun obscured by dust, from a volcanic eruption or a comet collision, but which?

- Collapses of civilizations after climatic changes, of less than world scale, in the Indus Valley and among the early Greeks (separate chapters), were discussed in *Climates of Hunger* R. Bryson and T. Murray 1977 — cited by Cerveny).

- The "Mayan mega-drought" that, with a disease outbreak (result of drought?), ended a civilization in Meso-America before 1000 A.D., is still a "great mystery"; Cerveny admitted its cause was not yet "solved".

Several events discussed had mainly local significance.

- The Israelites passage of the Red Sea would be dismissed as minor if published in a non-Christian country.

- The collapse of Petra's civilization was caused by a tectonic event, such as might hit Los Angeles or Wellington, New Zealand, any year — without affecting most of the earth.

- Columbus, not meeting a hurricane, survived to report new land, but someone else would have reported America soon in that age of exploration.

- the effect of Tibet's "weather spies" (in empire-building in central Asia) hardly qualifies as a "great mystery".

Other chapters discussed long-known phenomena in discussing weather/climate variation in various areas.

- The Little Ice Age, named in 20<sup>th</sup> Century, began long before 1500 in the Arctic. The decline of Norse Greenland settlements, from increasing cold in a marginal area (Bryson and Murray 1977), began before 1300 and was done by 1500. Grape-growing (and wine-making) in medieval England ended by 1500 (same authors).

- The El Nino Southern Oscillation (ENSO) was used to explain climate outside the Pacific after 1980, but El Nino — affecting bird populations of South America — was described much earlier (e.g., *Oceanic Birds of South America*, Murphy 1936).

- The Gulf Stream was known to sailors, and its effects on climate of western Europe to landsmen, 300 years ago. The similar current in the north Pacific was outlined a century ago. People then "in the know" had narrower interests, so the "thermohaline circulation" emerged as oceanography and climatology cast wider nets. Those phenomena were allowed for long before any explanation was sought.

This book's idea — that climate/weather helps explain some major events that affected many people — is valid. In support, the author assembled information, some little known previously, for the lay public. In my view, he included too many examples that weren't "great mysteries", and others that haven't yet been solved — thus "putting the lie" to the book's title. But it still may be read with enjoyment and for information.

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