

The Climate Change argument seems to have evolved into two competing religions, each with their own Gospel, and any divergence from either can be met with almost fanatical reaction. However, my observations are those of a Man-Made Global Warming Atheist.

I am a local historian and in attempting to uncover the ancient history of my home town of Derby I came across evidence that water levels had played a significant role in it's evolution. I published my findings in a book in 2006 but because I had accepted the Man-Made Global Warming view that sea levels, and as a consequence river levels, were higher today than at any time since the last ice age I explained the disappearance of the historic water levels on Glacial Rebound.

I later realised my error as continuing investigations led me to reconsider the Medieval Warm Period and the Little Ice Age. I began to turn up documented historical evidence for the sort of rise and fall in river levels that would explain my findings at Derby. I subsequently published my evidence in a second book.

I have been trying to get my findings into the debating ring but have found that the Sceptics want to deny that the climate is changing so they will not tolerate any alternative evidence. Likewise, the Climate Change Scientists do not wish to discuss any claim that the present warming is natural and has been predicted since James Croll went to press in March 1875.

In the Preface to his book **Climate and Time in Their Geological Relations** Croll states that, *“In the following pages I have endeavoured to give a full and concise statement of the facts and arguments adduced in support of the theory of Secular Changes of the Earth's Climate”*, and, *“The theory, especially in as far as it relates to the cause of the glacial epoch, appears to be gradually gaining acceptance with geologists. This, doubtless, is owing to the greatly increased and constantly increasing knowledge of the drift phenomena, which has induced the almost general conviction that a climate such as that of the glacial epoch could only have resulted from cosmical causes”*.

Croll's achievement was to show that the Ice Ages were a direct result of the change in the orbit of the Earth relative to the Sun and this has been developed by others including Milutin Milanković. What Croll demonstrates is that we are in a period where the Earth is getting closer to the Sun and will continue to do so for the next 25,000 years or so. In other words we are in a period of increasing probability of extensive warming and that this warming will match any previous highs of the last three million years.

So, why should the Climate Scientists ignore this evidence of projected warming from 137 years ago? Surely they cannot have consider James Croll to be a Man-Made Global Warming denier because there was no such argument during his lifetime. Could it be down to their embarrassment that they have been caught out by the political pressure that they now face to prove the inevitable after so many years of getting it wrong. (I remember the predictions in the 1950's that we were entering a new Ice Age).

Sea Levels - Perceived rise due to the lowering of the land.

This can be due to Glacial Rebound following the melting of great ice sheets and is a well documented phenomenon. It is generally accepted that North West Scotland is rising significantly and South East England is sinking as a result. Such changes are measurable.

See the work of Professor Ian Shennan, Professor in the Department of Geography, Durham University -

<http://www.dur.ac.uk/geography/staff/geogstaffhidden/?id=360>

Another cause of land height change is tectonic plate movement especially during an earth quake as witnessed by the Boxing Day 2000 Tsunami and the recent events in Japan.

Volcanic action can also cause land height change or even create new land. (e.g., Hawaiian Islands).

Sea Levels - Actual rise due to a warming climate.

During glaciation frozen water is locked on land surfaces in ice sheets, (e.g., Greenland), glaciers, (e.g., Alps) and permafrost, (e.g., Siberia), resulting in a lowering of sea levels. During periods of warming the frozen water is released and returns to the sea raising levels once more.

Leaving aside the movement of land there is ample historical evidence of sea level rise due to warming but before embarking on known facts concerning the northern hemisphere I want to set the draw your attention to the following.

Scattered around the warm seas are coral islands which are islands of accumulated coral growths. Herein lies a curiosity because coral only grows **under** water. At some time, and for a prolonged period, these islands must have been submerged reefs below the minimum tidal heights. If they have not been raised above the water by the sea floor uplifting then the sea level must have been higher and has since fallen.

If we accept the argument that sea levels are higher today than at any time since the last great ice age some 100,000 years ago then these islands must be of considerable age and date from a previous period of intense warming. Alternatively they are from a period since the last ice age when the seas were higher and have since fallen to expose the reefs.

Sea Levels around Britain

The British Isles are testament to rising sea levels since the last Ice Age because this was the very cause of Britain becoming an island. We know that Britain was once connected to the European mainland between 6,000 and 10,000 years ago although it could have been even more recent because the Romans were aware of the fact as quoted in the chapter, **Britaine**, by William Camden in, **Britain, or, a Chorographical Description of the most flourishing Kingdoms, England, Scotland, and Ireland.** (Britannia was published in Latin in 1586 and Philemon Holland's English translation of 1610 was based on Camden's final edition of 1607)

Climate – Historic evidence

Camden notes the claims of Roman historians who had stated that when the Romans invaded Britain it was a warm island and winters were mild and without snow. However, within a century or so the weather had turned decidedly chilly because the wooden 'post cards' known as the 'Vindolanda Writing Tablets', found at Vindolanda on Hadrian's Wall, included requests for underpants and socks to be sent from Rome.

The weather obviously continued to deteriorate during and until the end of the Roman occupation because findings from tree rings documented in the report published online 13th January 2011 in the Journal **Science**, DOI: 10.1126/science.1197175, titled **2500 Years of European Climate Variability and Human Susceptibility** by Ulf Büntgen and others suggested that a collapse in temperatures may have led to a collapse in Roman power.

The foregoing documented events seem to be suggesting a Bronze age warm period followed by a Roman occupation cold period.

The arrival of the Anglo-Saxons in Britain heralds the building of wooden houses - a far warmer construction than stone, brick and tile. No need for hypocausts! The British weather and sea levels start to be recorded in the Anglo-Saxon Chronicles. Substantial sea level rises are indicated by ships or whole fleets sailing in locations that are today just small streams or even dry land. The highest levels seem to occur in the eleventh century but, unfortunately, the Chronicles end in AD 1154 so other records need to be investigated for later weather patterns. What is suggested by the Chronicles is the onset of changing weather towards the end of the eleventh century.

We know from the Viking Sagas that Greenland was habitable during the years recorded in the Chronicles and we also have a date for when the cold returned and made it uninhabitable for the Viking way of life. For the Vikings to have sailed the Arctic and the North-West Passage the climate had to be more benign than even today so why did it decline so badly?

Atmospheric temperatures

Atmospheric pollution can dramatically reduce temperatures over vast swaths of the globe and there are records of catastrophic volcanic events that have led to "A year without a summer" in Britain. The cause of the AD 1816 event is blamed on the AD 1815 Mount Tambora eruption on the Indonesian island of Sumbawa, The eruption ejected massive amounts of volcanic dust into the upper atmosphere. **Wikipedia** claims that it was the world's largest eruption since the Hatepe eruption around the year AD 180.

Wikipedia lists other large volcanic eruptions during the same time frame as Tambora:-

1812, La Soufrière on Saint Vincent in the Caribbean

1812, Awu on Sangihe Islands, Indonesia

1813, Suwanosejima on Ryukyu Islands, Japan

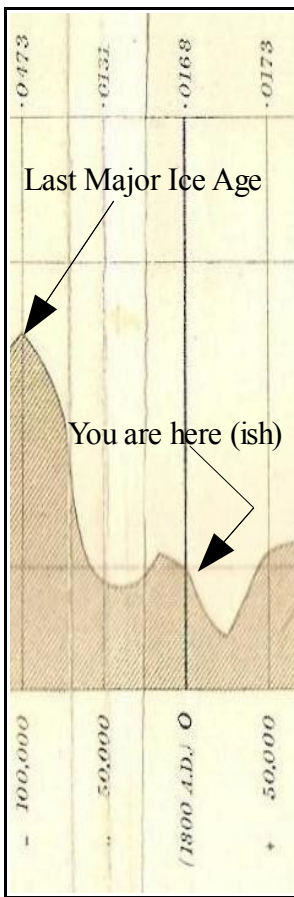
1814, Mayon in the Philippines

These eruptions caused less sunlight to pass through the atmosphere resulting in a world-wide fall in temperatures. When Tambora erupted Britain suffered crop failure, famine and death. All this from a volcano in far away Indonesia!

An earlier disaster struck when the Laki fissure and the adjoining Grímsvötn volcano, in Iceland, erupted over an 8 month period during 1783-1784. (**Wikipedia**) The eruption and its aftermath was estimated to have killed over six million people globally, making it the deadliest volcanic eruption in history. The drop in temperatures, due to the sulphuric dioxide gases spewed into the northern hemisphere, caused crop failures in Europe, droughts in India, and Japan's worst famine.

Knowing that atmospheric pollution can cause devastating cooling allows a different speculation on the cause of climate change. If the indications from Croll's chart are valid then the Earth has been moving closer to the Sun for the last 150,000 years and will continue to do so for another 25,000 years. (Except for the small reverse peaking around 20,000 years ago)

His argument was that the ice ages were caused when the Earth was moving towards the greatest distance from the Sun and this is now generally accepted. However, for this to be true then the periods when the Earth is approaching its closest orbit to the Sun must be when the planet is nearing its warmest. (See the following Chart)



Assuming from Croll that the underlying climate temperature trend is upwards we can argue that atmospheric events such as pollution and volcanic ash can cause a drop in absorbed radiation and, therefore, a drop in temperatures.

The long term rise in sea levels caused by the long term rise in climate temperature can be witnessed by the flooding of what is now the North Sea and English Channel. What was once dry land is now under 30 metres and more of water. Bearing in mind that water finds its own level, this cannot be a local event and must, therefore, be global.

What we see from the historical record is a steady and continuous rise in temperatures interrupted by occasional cooling modification events to the climate.

Left - section from Croll's chart showing 100,000 years before AD 1800 and 50,000 years after.

An alternative Man-Made Climate Change argument

As the Roman Empire spread throughout Europe they brought with them the first wave of true industrialisation. Fire was used to smelt lead, copper, gold and iron on an industrial scale. Ovens made bricks, tiles and bread and under-floor central heating became necessary in Britain. The sustained increase in atmospheric pollution above natural may well have resulted in man-made cooling as found in the Tree-ring evidence.

The eventual collapse of the Roman Empire and the spread of the 'Celtic' tribes including the Anglo-Saxons with their more organic culture would have resulted in less air-borne pollution and a clearer sky. The climate would have been able to resume its warming direction and Chronicle records confirm The Medieval Warm Period.

The rise of the Normans saw a return to industrialisation driven by the monastic organisations and a new arms industry as well as continuing population expansion. This increasing industrialisation continued in Britain and elsewhere in Europe. Military expansion and new arms technologies drove the metal production business. Swords, Pikes then musket and cannon saw a massive increase in smelting adding to atmospheric pollution. In the sixteenth and seventeenth century fire was also the standard production technique for glass, ceramics and even for raising water from mines. Then in 1712 Thomas Newcomen built the first self powered reciprocating engine using steam to create a vacuum. The 'atmospheric engine' burst into life and the steam age was born.

As industrial production and rail transport using coal generated steam peaked in the twentieth century we saw a number of pollution related phenomenon arising. Fog, freezing fog and smog of the nineteen-fifties coupled with heavy winter snow falls culminating in the savage winter of 1963.

However, the climate started to become milder with the advent of the clean air act and it is significant to me that the worries over 'pea-soupers' and acid rain have now given way to claims of man-made global warming at a time when efforts have been made to clean up the atmosphere. The recent winters of 2009/10 and 2010/11 are now being attributed to the atmospheric pollution caused by China.

Clearer Skies

An indication of the warming role played by increased solar radiation can be found in the **New Scientist magazine** which ran an article in the 5th July 2008 edition under the title of “**Europe's cleaner air makes for brighter days but hotter climes.**”

Reporting on work by Christian Ruckstuhl and colleagues of the Institute for Atmospheric and Climate Science in Switzerland **New Scientist** explained that the reduction in air pollution and smoky chimneys resulted in brighter days. Consequently more of the sun's rays had been able to pierce the atmosphere and this had, apparently, contributed to at least half the warming that has occurred since 1980. The scientists found that average air temperatures in Europe have risen 1 °C which is much more than would be expected from greenhouse gas warming alone.

They took the aerosol concentrations measurements between 1986 and 2005 from six locations in northern Europe and compared them with solar-radiation measurements for the same period. Whilst the aerosol concentrations had dropped by up to 60 percent during the 29-year period solar radiation had risen by around 1 watt per square metre. They considered that the decrease in aerosols probably accounted for at least half of the warming over Europe in the past three decades. Cloud cover without the addition of aerosols blocked sunlight less than when aerosols were involved suggesting that the aerosols caused more sun light to be reflected.

Conclusions

The major source of the Earth's warmth comes from the Sun and this can be experienced by anyone who notices the difference in temperature when a cloud passes in front of the Sun. More striking is the drop in temperature during a total eclipse over Britain.

There is little doubt that global temperatures and sea levels have risen considerably since the last major Ice Age but concern at this trend is only recently being expressed. Perhaps the more rapid rise of the last couple of decades has rung alarm bells for some. However, before becoming obsessed with arguments over CO₂ we should try to explain the incidents of cooling, particularly The Little Ice Age which was intense and prolonged. Was the Little Ice Age intensified as a result of industrialisation? Was it the intensity of the Little Ice Age that dropped sea levels to the extent that previously submerged coral reefs became islands?

The evidence I have found in the course of my historical investigations suggests that it is more likely that man's actions add to cooling and it is only with the introduction of 'greener' methods that this cooling effect is reversed.

It would be ironic if it were found that the successes of the Man-Made Global Warming lobby were contributing to natural Global Warming.

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