

Lessons from the Black Death

When I wrote the last essay for this page, the approaching Copenhagen climate change mega-conference (December, 2009) was daily news. Now it is almost forgotten.

The anti-climate change lobby is rubbing its hands with glee — temporarily. They see the Copenhagen meeting as a deserved failure. Two events have been used to try to discredit climate science. “Climategate” refers to the theft of private emails between climate scientists from Britain’s University of East Anglia. None of these emails casts serious doubt on the basic science of climate change, which involves thousands of separate pieces of evidence, but they do reveal this group of scientists to be fallible human beings. The second event used to discredit climate science is the discovery of minor errors in the 2007 Intergovernmental Panel on Climate Change report. One mistake concerned the speed of melting of the Himalayan glaciers. Although wrongly predicted to occur by 2035, this appeared only in the fine print. However, these events have greatly harmed the cause for climate change action in Australia, the US, Canada and India. There are increasing and disturbing reports of vilification of climate scientists. Some receive anonymous hate mail. Examples abound of malicious language associated with frank anti-science in the blogosphere.

Though some who attended the Copenhagen meeting claim it had several positive outcomes, I think it will be forgotten much more quickly than the 1992 conference in Rio de Janeiro, which successfully placed sustainable development on the global agenda — even though it failed to substantially alter the course of our collective human environmental onslaught.

A recent *Nature* paper describes the Copenhagen Accord pledges as paltry. Its authors warn that current national greenhouse gas emission targets might lock the world into exceeding 3 °C warming. This would initiate feedbacks that trigger accelerated warming due to the release of additional greenhouse gases from stores such as the Arctic tundra and the Amazon rainforest. In turn, this positive

feedback will cause further warming that generates additional gas release, ice melt and so on.

The Black Death & climate deniers

Meanwhile, anti-climate activists are celebrating in a way reminiscent of people who may have welcomed infected, plague-bearing rats into Europe at the start of what is known as the Black Death. This plague killed 30% to 60% of Europe’s inhabitants, reducing the world’s population from an estimated 450 million to between 350 and 375 million in 1400. This was an utter catastrophe for the generation that endured it. As far as I know, there were no such rat-welcomers, but one can easily imagine sceptics of the time devising a media scare campaign targeted at those who feared and opposed the rats. They could say truthfully, “Europe has never had a plague epidemic”, “Our population is at a record high” and “How can an invisible organism harm us? Rats and their fleas have been in Europe for centuries.”

We now know this organism as *Yersinia pestis*, transmitted by fleas but not discovered until 1894 by Alexandre Yersin. Imagine scientists of the day saying, “In Mongolia, the local people have taboos that reduce close contact with the local rodent, a potentially flea-bearing, plague-transmitting animal called a marmot. These same nomadic people have a custom which makes them break camp whenever nearby marmots become ill” (William McNeill, 1976, *Plagues and Peoples*, p. 167). And imagine the sceptics discounting this knowledge as stemming from “primitive” people a long way away. Why divert scarce public funds to anti-rat campaigns? You have nothing to fear!

Today, the anti-climate science lobby similarly ridicules both scientific and indigenous knowledge. A website called *Energy, Carbon Dioxide and Earth's Future* argues that even a trebling of the minuscule quantity of the main greenhouse gas (carbon dioxide, CO₂) from 280 parts per million to 840 parts per million would be trivial. (It is now about 390 parts per million.) It provides no scientific reference for this statement and simply appeals to common sense. But the Romans understood that the dose

makes the poison. It does not take much carbon monoxide in a closed space to induce drowsiness; trebling that dose will kill you quickly.

No one is arguing that climate change will end life on Earth, but instead that runaway climate change imperils civilisation (see Butler and Harley, “Primary, secondary and tertiary effects of eco-climatic change: the medical response”, *Postgraduate Medical Journal*, 2010, available free on line at <http://pmj.bmj.com/content/86/1014/230.full.pdf>). This is plausible by pathways that include sea-level rise, impaired crop yields, large-scale population dislocation and conflict.

Peak oil and climate change

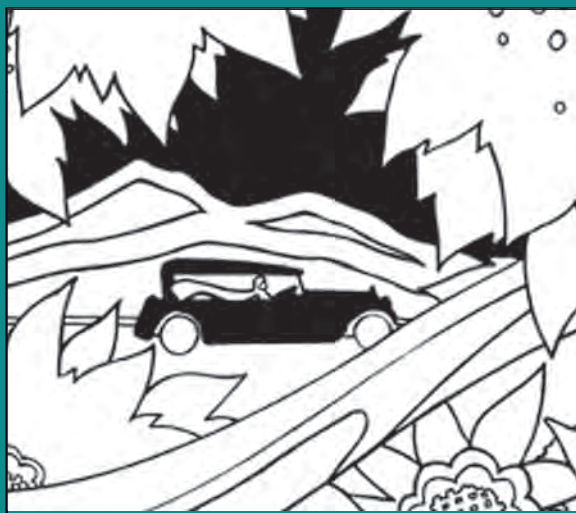
The imminence, reality and danger of peak oil have been boosted by a scientific paper in press in *Energy Policy* co-written by Sir David King, former chief scientist for the UK. In my opinion, the rising cost of energy due to peak oil is an even more important short-term global environmental problem than is climate change. The two issues have an important and worrying interaction. As conventional oil becomes increasingly scarce, energy companies are turning to unconventional energy sources. Fossil fuel-based energy (oil, coal, gas, coal-seam gas) remains far cheaper to develop in energy terms than renewables.

Greenhouse gas emissions (GHG) will rise even higher as the world shifts to coal and tar sands in Canada and Venezuela. Both population increase and elevated GHG emissions per unit of energy produced are eroding improvements in energy efficiency. An illustration of our desperation for continuing cheap energy is the invasion of Iraq, in which the role of oil is now widely acknowledged. In Queensland, Australia, tensions are emerging between coal gas miners and farmers, whose land is being damaged by mine infrastructure. We are also seeing the consequences of a catastrophic offshore oil well accident: the enormous oil slick in the Gulf of Mexico that is devastating marine ecosystems and imperiling human livelihoods.

Conclusion

Greeks resent the impending decline in living standards as their economy collapses. Clearly, many there and in such other countries as the UK have been living well beyond their means for years. Similarly, the whole global first and second classes (see *BODHI Times* No. 15) have been living beyond their environmental means for generations. It is delusional to think that humans can convert the natural capital of coal, gas and iron ore into money which then can be turned into forms of wealth to replace that lost natural capital. For example, while oil can be partly substituted by wind turbines, it is a poor replacement. Civilisation still functions, but our situation today is analogous to consumers in Greece three years ago. They thought the good times would continue forever, even though Hubris and its punisher, Nemesis, are central to Greek mythology.

The Plague is now much feared and the lessons taught by the Black Death understood, hundred of years later. But as a civilisation we are very far from absorbing the lessons that peak oil and climate change are about to teach us.



Driving
too fast,
running
on
empty