‘Social and Historical Impact of Climate Change’ Study Day

Saturday 12 April, 10.00-16.00, Building 65 Avenue Campus

10.00-10.20 Coffee

10.20-10.30 Welcome

10.30–11.15 Dr William Davies: Climate change, “disasters” and human evolution
Human evolution spans some six million years of climatic change. This talk will focus particularly on the period between 130,000 and 11,500 years ago, when our data on climatic and environmental change are more detailed, and our archaeological dating is more precise. However, this higher precision in dating has been refined, at best, to scales of hundreds of years, so we need to consider carefully what archaeological changes we can confidently attribute to environmental change. Recently, archaeologists have begun to focus on sudden “disasters”, such as volcanic eruptions, using them to explain archaeological change in the Palaeolithic (Old Stone Age). We shall explore the environmental effects of some key eruptions, such as the massive Campanian Ignimbrite eruption of almost 40,000 years ago, which has been claimed to have accelerated the extinction of Neanderthals in Europe. Do these sudden, catastrophic, events help archaeologists to explain changes in our ancestors’ behaviour better than slower climatic changes?

11.15–11.30 Coffee

11.30–12.15 Professor David Hinton: Climate, weather and the Middle Ages
The extent to which changing weather patterns, rising and falling sea-levels, and temperature variations were a ‘prime mover’ in explaining how society adapted to post-Roman conditions in England is controversial. Demographic fluctuations may have been caused as much by disease and cultural factors. The lecture will look at some of the direct evidence, but also at the ways in which archaeological and historical evidence can be ambivalent and open to differing interpretations.

12.15–13.15 Lunch

13.15–14.00 Penny Copeland: Living with flooding: Early Tewkesbury and its development
Tewkesbury regularly features on news programmes about flooding, yet it has Saxon origins and thrived during the Medieval period when it was still flooding regularly. How did this affect the town's development? We will look at how Tewkesbury compares to other towns and settlements in the Little Ice Age and why were we still building moats as the weather got wetter.

14.00–14.15 Tea/coffee

14.15–15.15 Professor John Sheperd FRS (National Oceanography Centre): Climate Change: what is happening, and what we can do about it?
The science of climate change predicts global warming of several °C by 2100 if the CO2 level in the atmosphere continues to increase to double its pre-industrial level - and it is now going to be very difficult indeed to keep CO2 below that level. Moreover, the climate will continue to change for a long time after that, even if we manage to reduce greenhouse gas emissions, as the oceans only slowly absorb the CO2 from the air. The big picture is that while global total emissions eventually need to be reduced by at least a factor of 4, global population growth and industrial growth by the developing nations will mean that we probably need to reduce emissions per unit of GDP by a factor

of forty. Can science and technology provide the solutions necessary for this kind of reduction? The low carbon energy technologies available to us can all contribute, but they are unlikely to be enough. CO2 capture and storage from power plants (CCS) and even perhaps from ambient air, in order to allow continued use of fossil fuels, is likely to be a vital development, and attempts to geo-engineer the climate are also conceivable… However, some mix of education, economic incentives and regulation will be needed to make these developments happen, and happen soon.

15.15–16.00 Questions & Discussions