

Shell London Lecture Series - Geology in the Age of Man

www.geolsoc.org.uk/shelllondonlectures12

Geological Society of London

Pollutants and Human health in the age of man



SPEAKER: *Jane Plant (Imperial College London)*

Approximately 160 000–200 000 years ago a biological change took place that would disrupt the natural equilibrium of the Earth, an equilibrium that had existed for the previous 4.5 ga. At that time Homo sapiens, evolved in east Africa and, from about 70,000 years ago, began to spread around the Earth. At first, as hunter-gatherers Homo sapiens made little impact on Earth systems, but from about 9000 years ago settled agriculture saw the first anthropogenic changes to chemicals in the environment. Soils were depleted of essential trace elements and this was reflected by loss of stature and increased prevalence of disease in human skeletal remains; many other species extinctions date from this time. Mining and mineral working, initially for gold but later for copper, tin and other raw materials, caused local pollution – especially with arsenic and mercury.

Large-scale disruption of the Earth system began in Europe in the seventeenth century with the agricultural and industrial revolution in Britain. This was increasingly dependent on the use of fossil fuels for energy and agrichemicals, and by the second part of the twentieth century the natural equilibrium of the Earth had been destroyed. There was an increasing impact as a result of burgeoning populations, increased consumption of energy-intensive animal – rather than vegetable – based protein and a demand for material possessions and travel. New chemicals were developed for plastics, detergents and pharmaceuticals, and, more recently, new materials such as engineered nanomaterials have begun to be released into the environment.

Politicians are battling to deal with just one of the chemical impacts of these changes – the accumulation of greenhouse gases in the atmosphere, with the potential to cause massive climate change. But there are many other serious man-made chemical threats to the Earth as a planet capable of sustaining human life. The presentation will explore some of the most important of these and indicate some of the fundamental changes in human behaviour that are needed if human life on Earth is to be sustained beyond the twenty-first century.

Date: *Wednesday 10 October 2012*

Timings: *This lecture will be given at 3pm and 6pm on this day (with tea/coffee served for half an hour before each), so please let us know, when applying for tickets, which talk you would like to attend.*

Venue: *The Geological Society of London, Burlington House*

Entry to this lecture is free to all, but by ticket only. Please call at reception (to your right) or contact the Society by post, phone, fax or email (see below).



For further information, please contact:
Conference Office, The Geological Society,
Burlington House, Piccadilly, London W1J 0BG
T: 020 7434 9944 F: 020 7494 0579
E: registrations@geolsoc.org.uk
W: www.geolsoc.org.uk/shelllondonlectures12
Follow us on [twitter](#) #shelllecture



In association with
www.shell.com

← 13.7 miles →

Shell London Lecture Series - Geology in the Age of Man

All past lectures can be viewed on our website at www.geolsoc.org.uk/shelllondonlectures11

2012 Programme

18 January	Earthquakes and tsunamis in the modern world	<i>James Jackson, University of Cambridge</i>
15 February	Rocks and climate change: How we can stop pulling the carbon trigger	<i>Bryan Lovell, GSL President</i>
28 March	Life at the edge: Sinking deltas	<i>James Syvitski, University of Colorado</i>
18 April	Impacts and Adaptation to Sea-Level Rise	<i>Robert Nicholls, University of Southampton</i>
9 May	Unconventional gas	<i>Melvyn Giles, Shell</i>
27 June	Sustainability of groundwater in a changing world	<i>Paul Younger, Newcastle University</i>
26 September	Volcanoes and man	<i>Kathy Cashman, University of Bristol</i>
10 October	Pollutants and human health in the age of man	<i>Jane Plant, Imperial College London</i>
14 November	Geological aspects of renewable energy	<i>Bruce Levell, Shell</i>
19 December	Incoming: Learning to love the meteorite	<i>Ted Nield, GSL</i>



For further information, please contact:
Conference Office, The Geological Society,
Burlington House, Piccadilly, London W1J 0BG
T: 020 7434 9944 F: 020 7494 0579
E: registrations@geolsoc.org.uk
W: www.geolsoc.org.uk/shelllondonlectures12
Follow us on [twitter](#) #shelllecture



In association with
www.shell.com