

The next north-European ice age

There are still a few people in northern Europe who think that global warming might not be such a bad thing. In Britain, where summer can sometimes seem to last little more than a few weeks, many would welcome the idea of it getting a bit hotter. Unfortunately, things are not so simple. Global warming doesn't just mean that the world will slowly get warmer. Paradoxically, it could cause certain areas to get colder - a lot colder. The latest predictions are that northern Europe could even be plunged into an ice age. While areas of south-eastern Europe, such as Greece, would continue to get hotter and drier, Britain could find itself, in the winter months at least, surrounded by sea ice.

The reason for this concerns the Greenland ice sheet. This is one of the biggest expanses of ice in the world - around 1,500km long and 600km wide. It is so big that if it all melted sea levels would rise by 7 metres. Due to rising emissions of greenhouse gases, such as carbon dioxide from the combustion of fossil fuels, this ice sheet is melting at an alarming rate. But how could the melting of the Greenland ice sheet threaten to plunge northern Europe into a new ice age?

The link in the chain of events is what some call the Gulf Stream and others call the Atlantic Conveyor. This is the stream of warm water that comes up from central America and flows across the Atlantic to northern Europe. It is this huge mass of warm water which accounts for the relatively high temperatures enjoyed by Britain, for instance, compared with parts of Canada and Russia which are equally far north of the equator. Warm water is conveyed across to Europe near the surface of the Atlantic, and at its northernmost point it cools and sinks because the water from the tropics has a higher salt content, making it denser and so heavier than the water near the arctic. The cold, dense water then flows south close to the ocean floor, back towards central and south America to complete the cycle.

Scientists are beginning to make bleak predictions of an impending ice age in the northern hemisphere because they have observed that the water flowing from the melting Greenland ice sheet is flowing into the path of the Gulf Stream. The water from the melted ice will reduce the density of the water in the Gulf Stream, stopping the water sinking in the north, thereby cutting off the deep southerly current, which, in turn, will cut off the northerly flow of warmer water. At that point the seas around Britain will begin to freeze.