

Nuclear Winter sceptics get the cold shoulder

by NIGEL HAWKES

NUCLEAR WINTER, the apocalyptic vision of the Earth freezing to death in the dark after a nuclear war, will be the subject of a one-day conference in London on Tuesday.

But it seems unlikely that those who pay £25 to attend the discussion, organised by the British Association for the Advancement of Science, will learn the most interesting fact about the Nuclear Winter theory—that it is wrong.

Professor George Rathjens of Massachusetts Institute of Technology has called Nuclear Winter 'the worst example of the misrepresentation of science to the public in my memory.' But he won't be at the Royal Institution on Tuesday to say so.

Nor will Dr Starley Thompson or Dr Stephen Schneider of the US National Center for Atmospheric Research in Boulder, Colorado, whose detailed examination of the theory concluded: 'On scientific grounds the global apocalyptic conclusion of the initial Nuclear Winter hypothesis can now be relegated to a vanishingly low level of probability.'

But the British Association has invited Professor Carl Sagan and Dr Richard Turco from the US, two of the original authors of the now-discredited theory, known as TTAPS after the names of its originators (Turco, Toon, Ackerman, Pollock and Sagan). They will be backed up by two Soviet speakers who also believe in TTAPS.

Professor Sagan, a tireless publicist for the Nuclear Winter theory, summed up its major implications in an article in *Foreign Affairs* in late 1983. 'There is a real danger of the extinction of humanity,' he declared.

'A threshold exists at which the climatic catastrophe could be triggered . . . a major first strike may be an act of national suicide, even if no retaliation occurs.'

Detailed research by others indicates that none of these central points is true. Nuclear war would have catastrophic consequences, but the extinction of humanity is not among them.

The original predictions came from a computer model which was totally inadequate. It treated the Earth as a dry, smooth billiard ball, omitting oceans, clouds, the atmosphere, rainfall, winds, sunrise, sunset, and other features normally seen as significant.

Arms control

Yet the proponents of the TTAPS model insisted that it was 'sophisticated' and 'robust.'

Any scientist is entitled to make mistakes, of course. That is why scientific theories normally undergo 'peer review'—the close examination by other experts who can point out flaws. Professor Sagan claims that the TTAPS model was subjected to peer review at a closed meeting of invited experts in April 1983. But the transcript has never been released.

And according to one critic of the theory, Mr Russell Seitz, who is a visiting scholar at Harvard, an \$80,000 retainer had been paid to a Washington PR firm to promote the idea before the peer review meeting had even been held. The money came from a group of foundations and organisations in the United States who saw Nuclear Winter as a powerful way of arguing for arms control.

The selling of Nuclear Winter began even before the first scientific paper on it had been published. More money was spent in 1984 on producing videos and advertising material about Nuclear Winter than was spent conducting research into it, Mr Seitz claims in a lengthy account in the American magazine *The National Interest*.

As research began, the most dramatic claims fell away. Instead of months of freezing darkness, it turned out eventually that if a war happened in July (the worst month) temperatures would fall by a few degrees for up to a month—turning July into September, in effect.

Instead of a year of Arctic darkness with the ground frozen solid a metre down, there would be a few weeks during which temperatures would be hard to distinguish from a cool summer day.

The drops in temperature would be caused by smoke from burning cities thrown high into the atmosphere. They would have serious effects on food production, and some people might starve as a result. But this is some way from global annihilation.

This summer *Foreign Affairs* published a corrective piece, by Dr Thompson and Dr Schneider, but it had nothing like the impact of TTAPS. In the current issue Professor Sagan has replied, but without denting the opposition significantly.

One of the most interesting aspects of the story has been the reluctance of scientists to point out that the emperor is wearing no clothes. Professor Freeman Dyson is quoted by Seitz as saying: 'It's an absolutely atrocious piece of science, but I quite despair of setting the public record straight . . . who wants to be accused of being in favour of nuclear war?'

THE OBSERVER
30/11/86