

# REVIEW

## Who will inherit the Earth?

**H**OW DO YOU review and rationally discuss the notion that a few hours of nuclear war can set life on this planet back a billion years? That bacteria—those that survive massive doses of radiation, a year or more of freezing cold and darkness, and the poisoning of the land, the air, the sea and the gene pool—will inherit the Earth, or what is left of it. How do you write or even think of these things in a way that communicates anything at all, even to yourself? Would not any sane person be expected to go mad if they honestly thought all this over quietly, and realised how close to fruition it is?

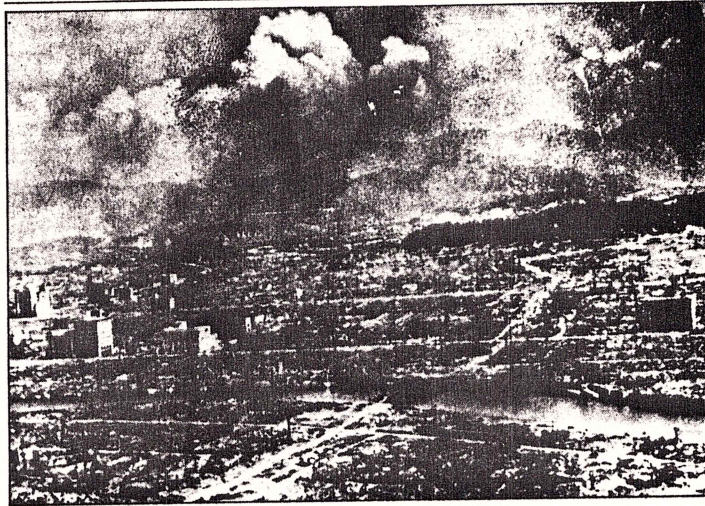
During the past year the expression "nuclear winter" has slowly gathered momentum and audience. With a sudden shock of comprehension, our imaginations are just beginning to cope with a bit of what it means: "For more than a week in the northern midlatitude target zone, it might be much too dark to see, even at midday." In Case 17 (one of the more "pessimistic" scenarios envisaged), after more than two months temperatures will fall to  $-47^{\circ}\text{C}$ —temperatures characteristic of the surface of Mars. They rise to freezing point after about a year. It was, in fact, Carl Sagan's study of Martian dust storms that led to his more practical, down-to-earth discoveries.

*The Cold and the Dark* is a product of the conference on the long-term worldwide biological consequences of nuclear war, held in Washington last year. A satellite link with Moscow allowed Soviet scientists to participate directly in the proceedings. I suppose it is some comfort to know that their independent studies and assessments reached almost identical conclusions. Assuming a nuclear exchange of 5000 megatons (a conservative estimate), so much dust, smoke, soot and ash will enter the atmosphere from the immense firestorms that will sweep over the target areas, that the Sun will be blotted out for months. We come to realise that the immediate consequences of the explosions are of secondary importance. The destruction of all major cities in the northern temperate zone, the death of a billion people, and the injury and probable death of a billion more—this is just prologue, just the beginning.

Carl Sagan writes of the effects

**The Cold and Dark: the World After Nuclear War**  
By Paul R. Ehrlich, Carl Sagan, Donald Kennedy and Walter Orr Roberts, *Sidgwick and Jackson*, pp 229, £8.95

Paddy Ashdown



*The calm before the storm*

that a nuclear war could have on the atmosphere, and therefore the climate. Paul Ehrlich considers the biological results that this could lead to. Discussions among more than 50 American, British and Soviet scientists deal with further details, while two appendices go into the finer points governing the destruction of most of the life forms on Earth. It is very scientific, very mathematical and very chilling.

The authors examine alternative scenarios with "robust" (that is, reliable) estimates of the likely results. But there is also a continuous refrain of "conservative" calculations, so that we are left with the deep conviction that the scientists involved have erred on the "bright side" in their evaluations, because they have been unable to imagine things as horrible as, in fact, they will be.

A number of participants point out a rather obvious fact, but one which bears repeating. Even if one side mounts a preemptive strike that is massive enough to be completely successful—so successful that the victim is unable to counter with a single missile or bomb of his own—the victor will enjoy his triumph for about a month, possibly less. After that the black blanket and the freezing cold will irrevocably circle the Earth and smother the victor as well. It will almost certainly go on to envelop most of the southern hemisphere, assuming of course that that portion of the world

escapes the missiles themselves. Victor, victim, and neutral will all go the same way in a matter of just a few weeks. The justification for the old-style balance of power was that it produced nuclear security. What the balance of nuclear power produces is mutual suicide.

The proposed scenarios vary to the extent that some of the more optimistic ones accept the survival of small groups of people, mainly on islands in the southern hemisphere. If they are fortunate and adaptive enough they will return to a hunter-gatherer existence. It is an open question whether these isolated communities would survive for many generations. If they do, they will be inbred and terribly mutated. Less optimistic assessments give rats and insects as the inheritors of our planet. The most pessimistic favour the protozoa. Most plant life will die in a nuclear winter that is a year long. Photosynthesis will have ceased in most places. Even the plankton will largely disappear.

There are suppositions about the extent, nature, duration, and consequences of the vast increase in radionuclides and the increased exposure to ultraviolet light that will follow even a moderate nuclear exchange. But this is almost gilding the lily and, of course, it is totally irrelevant to ask how civilisation will be affected. The long-term poisoning of Earth's ecosystem is not a new consideration. What *The Cold and the Dark*

concentrates on is new matters. And they really are new. Politicians had never thought about them and scientists stumbled on them virtually by accident two or three years ago. Even though enough facts have been available for 20 years or more, no one thought to go looking for them. We are an unimaginative species—a deficiency which, in the nuclear age, could well spell the end of us.

I wonder what presidents, prime ministers, and their cabinets in Washington, Moscow, London, and elsewhere are making of all this, now that the facts, or some of them, are set out for all to see. From what can be made out, nothing. Even now. The news that a nuclear war must, inevitably, bring to the end of civilisation, the likely ecological poisoning of the planet and reduce all life to residue, does not appear to have reached our leaders. They still talk of nuclear war in terms of sandbags in the hallway, tap over the windows, a "hard pressed" medical service, and so on. The Pentagon's deputy under-secretary for Strategy and Theater Nuclear Forces says "soil is just great stuff. If there are enough shovels to go round everybody's going to make it."

The blanket of ignorance and blind idiocy that for 40 years has enveloped all government thinking is an essential ingredient for a "nuclear deterrent." What *The Cold and the Dark* does is to lift a small corner of that blanket which has cut off the light of reason and knowledge, as surely as the blanket of smoke and dust that will follow a nuclear war shall cut out the light of the Sun. Despite this new information, the edifice of US, British and, it seems safe to assume, Soviet government policy will remain set, static and seemingly immovable still.

And yet, I have an uncomfortable feeling that, in the end, the anti-nuclear weapon campaign will win. That stupidity which surrounds and sustains government policy, ours, the US's and the Soviet Union's—will crumble and collapse, and the black blanket of "nuclear deterrence" will be lifted. And perhaps quite soon. As the lady might say or might be brought to say: there is no alternative. Not, that is, if we wish the human race to survive a little longer.