

Treating the nuclear scar

A World Beyond Healing

by Nicholas Wade, *Sidgwick and Jackson*, pp 190, £12.95

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IF a book about such an unattractive subject can be attractively written, Nicholas Wade has done it. He is a professional journalist with the gift of clear writing allied to a great depth of understanding.

Wade began to write a report on a meeting in the US National Academy of Sciences, in 1985, on the medical implications of nuclear war. He found it necessary to write more fully about the circumstances in which nuclear war might occur and the totality of subsequent effects. His account vividly recalls the bombing of Hiroshima and Nagasaki. He reports accurately on the assessment of the prompt and short-term deaths from blast, burns and ionising radiation, and that after 40 years there is no evidence of genetic defects in the first generation from those who were exposed and survived. It will not be long before the second generation shows if there are any recessives. He notes also the absence of Downs syndrome but the occurrence of mental retardation

among children born to mothers pregnant when exposed. On excess cancer, he records that no clear increase was observed below about 50 rads (0.5 grays).

The dose of radiation over 48 hours to kill half those exposed is conventionally taken as 450 rads (4.5 grays) but Wade reports the arguments of Joseph Rotblat and others on a lower figure. He also discusses the evidence of Chernobyl on local effects, but on dispersion he relies on the predictions from the US's Lawrence Livermore National Laboratory. A rather better picture was put together in Europe mainly through data available from the Meteorological Office and the modelling work at Imperial College, London.

Since the book went to press, the World Health Organisation has produced a second report on medical consequences and the study by the Scientific Committee on Problems of the Environment (SCOPE) has been up-dated to help the UN Disarmament Commission's

special study group. This cannot yet have been discussed in the current meetings or the new case-studies on agriculture in different countries.

Wade deals fairly with the development of the hypothesis of a "nuclear winter", showing the transition from the role of dust obscuring the Sun to smoke from fires in forests and cities. The importance of timing as well as temperature depression in relation to crop development is central to forecasts of crop losses in one season. The removal of agricultural subsidies in the form of machines, fertilisers and pesticides is the obstacle to recovery and the foundation of famine. He deals with the criticism that smoke can be washed out but has not included all the evidence from Livermore and Colorado State University on lofting through the tropopause. He cannot have the information on optical density which has arisen from the new mathematics on fractal smoke, devel-

oped at Queen Mary College and the University of Bristol.

On problems of strategy, the book is hopeful and the author gives a fair crack of the whip to President Reagan's Strategic Defense Initiative (SDI). He treats the differing views on scenarios for nuclear exchange and comes through well in the new climate of hope that an INF treaty will be signed. Those who have been closely involved in the SCOPE study (300 scientists from 30 countries) certainly feel their work has been profitable and will reinforce international contacts. They are grateful that the declaration made at the Pontifical Academy of Sciences in 1982 was followed by the encouragement of the International Council of Scientific Unions, in Paris, to embark on a study of the environmental consequences of nuclear war.

This book from a critical reviewer sheds some light on their obscure work for which they can be grateful. □