Maintaining the balance

John Maddox

Strategic Defenses and Arms Control. Edited by Alvin M. Weinberg and Jack N. Barkenbus. *Paragon House, New York: 1987. Pp.263. $24.95.*

MARCH 23 1983, when President Ronald Reagan made public his dream of constructing a comprehensive defence against ballistic missiles, known as the Strategic Defense Initiative (SDI), was a fateful day for would-be arms controllers and their well-wishers. After a quarter of a century of labour in the negotiating rooms, they could boast of only two substantial agreements that enjoyed the benefit of having been ratified — the partial test-ban treaty of 1963 and the Anti-Ballistic Missile (ABM) treaty, ratified in 1972. The offer of SDI inevitably, therefore, gave offence to those who listened carefully five years ago, not merely because it seemed like making science fiction the cornerstone of policy but because success would spell the end of the ABM treaty.

Alvin Weinberg is one of the world's reasonable men (which is not yet a pejorative term). He and his co-editor, Jack Barkenbus, have drawn together a symposium of the views of people who do not instinctively cry "foul" at the suggestion that strategic defence may have a useful part to play, not merely in military security, but in the process of arms control itself. Their book is neither a case for building comprehensive defences against ballistic missiles nor an evaluation of SDI as such. Rather, it is an examination of the ways in which strategic defences could contribute to stability and even arms control. That by doing so they will offend some of those to whom the ABM treaty has become a shibboleth is neither here nor there, and certainly not their fault.

Nevertheless, it would have helped the general understanding — and the general case that Weinberg and Barkenbus seek to make — if they had more explicitly reminded their readers of the great arguments about the ABM treaty in the four years preceding its ratification. There is no echo here of the passionate intellectual clashes in the United States between members of the President's Science Advisory Committee (not yet abolished) and of the US Congress on the one hand, and the military on the other.

By what magic, in the end, did the ABM treaty come to be agreed? In Washington, the telling case was the wish to protect the doctrine of mutually assured destruction (leading to deterrence) from erosion by effective defensive systems, which was probably also the clinching argument in Brezhnev's Soviet Union. But liberal opinion in the United States paid more attention to the prospect that a competition to build ground-based anti-missile missiles would be ruinously expensive, and probably ineffectual as well. The Pentagon, chastened by the problems of making the Sprint missile function properly, had little choice but acquiescence.

What has changed? Weinberg and Barkenbus say they are disappointed that the ABM treaty did not persuade the superpowers to stand still in the accumulation of offensive weapons, but was that ever on the cards? That, surely, was the function of the successful negotiation of the limitations of strategic arms in the 1970s (when, the editors say, arms control was given undue attention). Even now, the new treaty on Euromissiles notwithstanding, these agreements remain worthwhile. Meanwhile, the old arguments in favour of the ABM treaty live on in the arguments against SDI.

Yet Weinberg and Barkenbus are right to have raised their awkward question. SDI in the sense of President Reagan's vision will probably not long outlast his presidency, but it would be folly to believe it will leave no mark on the strategic relationship between the United States and the Soviet Union. What, for example, will be the role of infrared satellites for early warning of missile attack in future years?

What Weinberg and Barkenbus plead for, in their concluding statement, is a managed transition to a "defense dominated world", in which for example the protection of missile sites will be given priority over the protection of civilian populations (so as not to destabilize deterrence). Nobody will dispute their intentions, but only the adequacy of the fund of rationality necessary to effect such a subtle transition. May it not be a better to hope that the arms control process will in due course serve what has always been a large part of its purpose — to encourage a political climate in which the dangers of conflict are intrinsically reduced?

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Flower power

Keith Allen

The Origins of Angiosperms and Their Biological Consequences. Edited by Else Marie Friis, William G. Chaloner and Peter R. Crane. *Cambridge University Press: 1987. Pp.358. Hbk £27.50, $44.50; pbk £9.95, $16.95.*

AN increasing number of scientific books are edited compilations of papers. They loosely fall into three categories: those resulting from a general conference or symposium; those based on a more specific scientific meeting; and those in which the editor(s) invite selected authorities to cover what they feel are the most important topics for a well-balanced volume. In general, books in the first category are the least satisfactory, comprising a *mélange* of papers (chapters) which often have little relationship to one another, or to an overall theme. The best are usually those in which the editors are given a free hand in selecting topics.

The Origins of Angiosperms and Their Biological Consequences is the result mostly of papers presented at a conference of the same name and happily has the unity of an 'editor-selected' book. On reading the title and before seeing the chapters, I wrote a list of the topics I would expect to be covered. Almost all are present, although I had listed a chapter on fossil soils with reference to angiosperm, metazoan and fungal interrelationships, and I expected more discussion of afforestation.

The editors are to be congratulated on a number of counts. They have written a useful introduction which is followed by a good sequencing of chapters. They have confined the less readable statistical information to appendices and they conclude with a glossary of terms and the classification used throughout the book. (I note, however, that P. Crane uses the word Pteridophytes to include both the Lycophyta and Pteridophyta.)

The ten chapters are well written and understandable. They cover the origins of angiosperms relating the groups through cladistic analysis, changes in vegetation resulting from angiosperm diversification and various aspects of plant/animal interactions and interrelationships. The palaeogeography and palaeoclimatology at the time of early angiosperm evolution is discussed. One small criticism is that the last chapter, although well written and informative, is more provincial in content when compared with the more general theme of the earlier chapters.

Within university teaching, my impression is that during the last five to ten years there has been a move away from general taxonomy towards a study of the biologically related aspects of both fossil and recent plants and animals. Palaeoecosystems and coevolution, for example, can fire the imagination of the student, and this book fills an important gap in the literature.

Its interdisciplinary approach should attract a wide audience in both biological and earth sciences. It should be widely read, but I expect it to be of especial interest to the third-year undergraduate. □

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