

In 1975 a contract was awarded by the Nature Conservancy Council to the University of Lancaster to prepare a comprehensive account of British vegetation. With the cooperation of many other workers this National Vegetation Classification has been conducted with considerable publicity and in January 1991 the first volume will be published, to be followed in rapid succession by the remaining four volumes. No reference to this venture appears in the book and, as a consequence, the classification which the authors have set up simply by equating British vegetation to that described on the Continent will differ substantially from the system about to be published. The latter has been largely based on analyses of existing vegetation and classification using multivariate techniques. Not surprisingly, some British types of vegetation differ considerably from their continental counterparts and it may not be appropriate to refer to them by the same name.

Even if the authors are forgiven for supposing that the gestation period of the National Vegetation Classification has

been so long that a stillborn result could now be expected, their omission of any reference to computerized methods of handling data is remarkable. The techniques described in chapter 3 could have been written half a century ago and indeed convey much the same information as in the English translation of Braun-Blanquet's *Plant Sociology: The Study of Plant Communities* (McGraw-Hill: 1932).

It seems that an opportunity has been missed to provide a much needed introductory textbook which would have prepared students to accept the methods and classification of the National Vegetation Classification which are already widely in use. There is the risk that it is counter-productive because it sets up two different systems of nomenclature and will make students justifiably irritated, in much the same way as do the apparently unending changes of the scientific names of plants. □

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Poison gas

Matthew Meselson

The Challenge of Chemical Weapons: An American Perspective. By Victor A. Utgoff. Macmillan: 1990. Pp. 273. £35.

THE most valuable contribution of this book to the literature on chemical weapons is suggested by the subtitle, 'An American Perspective'. As a former staff member of the US National Security Council and chairman of the Interagency Group on Chemical Weapons in the Carter Administration, Victor Utgoff was well positioned to note the views of the relevant US government agencies regarding chemical weapons and chemical disarmament. After a brief and generally useful account of the history of chemical weapons and chemical arms control efforts, the book focuses on US policy for chemical weapons — a policy that has two rather different components. One is the effort to produce and maintain chemical weapons as a like-for-like deterrent and retaliatory force. The other is a pursuit of a global chemical disarmament treaty as a means to prevent proliferation and to eliminate or substantially reduce the already existing chemical threat. This duality leads Utgoff to define a major challenge he sees facing US policy. How, he asks, can support be maintained for a US retaliatory chemical capability sufficient to deter the Soviet Union until an effective chemical arms ban enters into force?

Framed this way, the question appears moot. Since Utgoff wrote, the Warsaw

Treaty Alliance has disappeared as a military entity, US chemical weapons have been withdrawn from Europe and the US binary chemical weapons production programme has been cancelled. In view of these changes, one might think this most distinctive part of the book would be of historical interest only. Not so. US policy continues to be dominated by the tension between chemical deterrence and chemical disarmament. Some in Washington argue that the Soviet threat has been replaced with present and possible future chemical threats from the Third World. This approach underlies Defense Department support for the current US proposal

at the chemical disarmament negotiations in Geneva that would allow it to retain two per cent or about 500 agent tons of its chemical weapons stocks indefinitely, until it is satisfied that all other "chemical weapons capable" states have joined the treaty. Because the idea of such residual stocks is strongly opposed by many of the nations negotiating the treaty, insistence on it could defeat the entire enterprise. Whether or not one finds the military case for retention of a US chemical deterrent convincing in this newer context, Utgoff's presentation remains of interest.

Utgoff makes the familiar argument that although antichemical protective measures can keep chemical casualties to militarily negligible levels, the burden of wearing chemical protective gear and taking other necessary precautions will seriously interfere with the performance of specific types of combat activity. The more novel part of the presentation is a consideration of the effects of chemicals on thirteen different target types in a NATO-Warsaw Pact confrontation in Europe. In that hypothetical context, chemicals are seen as of low effectiveness against mechanized targets and targets with collective antigas protection, such as tanks, self-propelled artillery, rocket and missile launchers and field headquarters, but of high effectiveness against air bases, military storage and repair sites and infantry engaged in dismounted assault. Chemical weapons are accordingly portrayed as necessary for deterrence of chemical attack and for possible retaliation, to force an adversary into a level of protective posture similar in its effects to that which his chemicals impose on ones' own forces.

Missing from Utgoff's analysis is any evaluation of the arguments against a policy of chemical deterrence. What



Chemical warfare — tension still exists between deterrence and disarmament.

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