

But Schell skates on thin ice in getting there.

Thus he asserts that scientific knowledge is different from other knowledge in that it cannot be forgotten. Really? And that

a disturbing corollary of the scientists' inability even to foresee the path of science, to say nothing of determining it, is that while science is without doubt the most powerful revolutionary force in the world, no-one directs that force.

But Schell's real objective is to contrast and compare the notions of death and extinction, one personal, the other for the species. He rightly and evocatively finds a parallel between the extinction of wagon-loads of people in the concentration camps and the feared extinction of whole species. It is an ethical goal, he says, to seek to avoid extinction. Yet living as we do on top of a nuclear stockpile, we are "living with a lie".

The core of Schell's final essay is a comment on the doctrine of deterrence, a popular target these days. If the objective is to build a weapons system so powerful that the destruction of an adversary can be assured, how can success be made convincing without a demonstration? But detente is no good either: look at the way the Soviets made "crimes against detente" punishable, and how President Nixon pleaded exemption from the laws of the United States for the sake of a peaceful world. The real bugbear, Schell says, is sovereignty (but his book was written before the Falkland Islands conflict).

... just as those who favour the deterrence policy ... must in all honesty admit that their scheme contemplates the extinction of man in the name of protecting national sovereignty, so must those who favour complete nuclear and

conventional disarmament, as I do, admit that their recommendation is inconsistent with national sovereignty . . .

Read as a piece (and it does not take long), Mr Schell's book is thus an extraordinary let-down. "I have not sought to define a political solution to the nuclear predicament" but "I have left to others those awesome urgent tasks . . .". There's generosity for you; some other author, another four-part series in the *New Yorker*, perhaps?

What Mr Schell has forgotten (apart from the precursors whom he fails to mention) is that the simplest explanation of his opening conundrum — why are we

mostly so indifferent? — is not a failure to imagine what nuclear war would do to us but a failure to devise political procedures for its sure avoidance. People have seen the difficulties and have sometimes lost heart. Mr Schell's recipe, if taken seriously, can only further depress them, for in his eloquent way he is saying that the problem would be manageable if only the world were an entirely different place. For a book that makes so much of people's ethical responsibilities, that is not merely a disappointing conclusion but an irresponsibly airy recipe for conduct. □

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Affinity for industry and biomedicine

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Affinity Chromatography and Related Techniques: Theoretical Aspects/Industrial and Biomedical Applications. Analytical Chemistry Symposia Series, Volume 9. Edited by T.C.J. Gribnau, J. Visser and R.J.F. Nivard. Pp.584. ISBN 0-444-42031-2. (Elsevier Scientific: 1982.) Dfl.195, \$83.

AFFINITY chromatography has marched out of the research laboratory and into the world. That was to be the message of the symposium held in June of last year at Veldhoven, of which this book is a record, and the organizers emphasized it by bringing together similar numbers of participants from industry and academia. Meetings based on the discussion of a technique run the risk of being boring since the wide range of possible applications may contain only little of interest to an individual. The organizers overcame this by concentrating the contributions around biomedical applications and relevant industrial processes. This theme penetrated also into the contributions on theoretical considerations and developments in supports and chemistry; many of these were based on biomedical or industrial needs.

By far the most exciting current application of affinity chromatography is indeed to the biomedical field. Even the ability to simplify the isolation of useful compounds from biological sources will open up new possibilities in patient treatment and management. Several contributions describe the commercial production of proteins from human plasma by this technique, others indicate the way to future products, while one author laments that only lack of knowledge of their function inhibits the isolation of more plasma constituents — perhaps the physiologists will take up this challenge. Exploiting the high specificity of antibodies in therapy, as reagents and as affinity ligands, has often been hindered by difficulties in their isolation due to the high interaction energies between antigen and antibody.

The successes described here in the fractionation of antisera and in the purification of vaccines will help many, particularly when combined with the practical conclusions in the theoretical paper by van Oss.

Some disquiet was expressed at the meeting that ligand leakage might contaminate products intended for clinical use with hazardous compounds, especially where organic dyes are the ligands. These problems should be easy to overcome. After all, what is affinity chromatography about if not to remove small quantities of a substance from large quantities of other material?

One forward-looking section of three papers considered the use of affinity systems directly in therapy, for the delivery of drugs to specific sites *in vivo* and for the extracorporeal treatment of blood to remove toxins, drugs and so on. Although there is a long way to go, these approaches to more specific treatment of disease are surely to be encouraged.

It is rare to read of an affinity chromatography system that is not based on cyanogen bromide-activated agarose, yet most meetings include sections on new supports and coupling methods. Why is this? One answer was evident at Veldhoven. Both large-scale work and the new high-pressure liquid affinity chromatography systems need robust supports such as the glass, silica and polymers described by several speakers.

Many good posters were shown at the meeting and it is a pity that, tantalizingly, only the titles, not their abstracts, have been published in the book. Nonetheless those interested in using the technique rather than in studying the phenomenon will find much of value in this volume; even the theoretical section contains advice which will be of much practical use. □

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Journals' review issue 1982

On October 7th *Nature* will publish a second review supplement devoted to science journals. Last year's supplement, covering journals first published between January 1978 and May 1980, appeared in *Nature* 293, 341-369; see p.343 of that issue for details.

Criteria for inclusion of a journal in the 1982 issue are that:

- the first number appeared, or the journal was re-titled, between June 1980 and May 1981;
- it is published at least three times a year;
- the main language used is English.

Broadly, periodicals of professional interest to scientists will be considered for review, with the exception of abstracts' journals.

In addition it is hoped to cover publicly available newsletters, first published between January 1978 and May 1981, in that issue.

Publishers and societies are invited to submit four sample issues of periodicals satisfying the above criteria, including the first and most recent numbers, to the Review Editor, *Nature*, 4 Little Essex St, London WC2R 3LF, England (London 836 6633 ext 2570) as soon as possible.