

## CORRESPONDENCE

## NIH guidelines

SIR — Comments are invited on two proposals for a major revision of the US National Institutes of Health (NIH) guidelines for research involving recombinant DNA molecules. The recombinant DNA Advisory Committee (RAC) has developed a proposed revision and recommended that it be published for comment. This proposal appears in the *Federal Register* dated 4 December 1981. The major features of this proposal are:

(1) The guidelines would cease to be mandatory and would become a voluntary code of standard practice. The following requirements would be eliminated: that institutions have an Institutional Biosafety Committee (IBC), that investigators obtain prior approval from the IBC before beginning certain experiments and that investigators obtain prior approval from NIH before beginning certain experiments. The section of the guidelines specifying that noncompliance could lead to loss of NIH funds would also be eliminated.

(2) Section III of the guidelines giving containment levels would be greatly simplified, and most experiments currently requiring P2 or P3 containment would be recommended at P1.

(3) The prohibitions section (I-D) of the guidelines would be eliminated, although two of the current prohibitions (I-D-2 and I-D-5) would be retained as admonishments. An alternative proposal appears as item 7 in the *Federal Register* notice of 7 December 1981. The major features of the proposal are:

(1) The guidelines would continue to be mandatory for institutions receiving NIH funding. Certain experiments would require prior review by NIH. Certain experiments would require prior review by IBC, and certain experiments would require notice to an IBC simultaneously with initiation of the experiment.

(2) Section III of the guidelines would be reorganized and simplified. All experiments would fall into one of four classes. Physical containment requirements for some classes of experiments would be lowered.

(3) Three of five current prohibitions (I-D-2, I-D-4, and I-D-5 in the current guidelines) would be listed in a new section that would continue to require RAC review and NIH approval before initiation. Experiments currently falling under prohibition I-D-1 and I-D-6 could proceed after IBC approval.

Copies of the above-mentioned *Federal Register* notices as well as a summary comparing the current guidelines with the two proposals are available from the NIH Office of Recombinant DNA Activities. Comments on these proposals should be directed to the attention of the Director, Office of Recombinant DNA Activities, National Institutes of Health, Building 31, Room 4A52, Bethesda, Maryland 20205, USA. These proposals and comments on them will be considered by the RAC at its next meeting on 8–9 February 1982.

WILLIAM J. GARTLAND JR

National Institutes of Health,  
Bethesda, Maryland, USA

## Laotian postscript

SIR — The clandestine US war against Laos during the Second Indochina War was for the United States substantially an air war — in terms of environmental impact almost entirely so. Its operational aspects have been well described<sup>1</sup>. Laos received more than 2.2 million tonnes of air-delivered munitions, fully 31 per cent of the US air war against all Indochina<sup>2</sup>. The massive wide-area saturation bombing from B-52 stratofortresses alone ultimately added up to 800,000 tonnes of bombs, accounting for 36 per cent of all such missions flown during the war throughout Indochina. The air war against Laos was carried out during the years 1965–73; the three peak years were 1969–71, which were almost equally intense and together accounted for 68 per cent of the Laotian total. An estimated 70 per cent of the entire US air assault upon Laos was in southern Laos (the panhandle), carried out primarily against the supply routes into South Viet Nam (the Ho Chi Minh trail). The remaining 30 per cent of the bombing was directed against northern Laos, to a major extent against the Plain of Jars in central Xieng Khouang province.

Herbicide chemical warfare attacks by the United States during the Second Indochina War were at one time or another directed against all four of the Indochinese nations of the time, overwhelmingly so against South Viet Nam and in only small but unknown amounts against the others. However, the United States has recently released some relevant information regarding Laos<sup>3</sup>. During

the years 1965–69, the United States flew some 100 anti-plant missions (over 400 sorties), with 1966, the peak year, accounting for 76 per cent of them. Altogether 1,600 cubic metres of herbicides were dispensed, mostly (83 per cent) Agent Orange. This Laotian spraying thus represented 2 per cent of the total Indochina effort. The area sprayed was some 67,000 hectares (not counting overlap), 0.2 per cent of the area of Laos. Most by far of this spraying occurred in southern Laos; and most of the spraying was for purposes of forest destruction to expose the Ho Chi Minh trail. A very small but unknown amount of the total spraying (perhaps 3 per cent, the proportion of Agent Blue dispensed) was devoted to crop destruction in the Plain of Jars and possibly elsewhere.

The Plain of Jars was especially hard hit during the war in terms of both social and environmental upheaval<sup>4</sup> and is recovering extraordinarily slowly<sup>5–8</sup>.

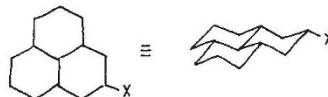
ARTHUR H. WESTING

Hampshire College,  
Amherst, Massachusetts, USA

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- Branfman, F. *Voices from the Plain of Jars: Life Under an Air War* (Harper & Row, New York, 1972).
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To trans, trans, trans-tricyclo [7,3,1,0<sup>5,13</sup>] tridecane

SIR — We are investigating the mechanisms of reactions of organic compounds in solution, in particular the relationship between a compound's reactivity and its molecular shape. We have prepared a number of new compounds, and the most recent of these has an especially pleasing shape and symmetry.



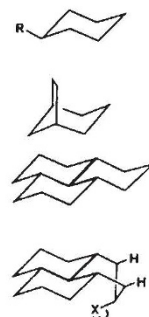
To celebrate this, we thought that a new form of reporting serious scientific results was appropriate, and the sonnet (Elizabethan rather than Petrarchan) seemed worth investigating. A fuller report, not in verse, is to be given today (17 December) at the Scottish meeting of the Perkin Division of the Royal Society of Chemistry at Strathclyde University.

Shall I compare thee to a single form  
Of cyclohexane locked with bulky group?  
Or should it be with that bicyclic norm  
Whose ethane bridge 1,5 doth fix the hoop?

Thy undistorted, perfect, trans-fused rings  
By force field calculation hold no strain;  
No rapid rates which angle bending brings  
As in bicyclo [3,2,1] octane.

Some help thy ground state conformation needs  
To free an equatorial tosylate,  
So ring-flip from an all-chair form precedes  
Reaction from a boat transition state.

And then departs the leaving group when trans  
Coplanar hydrogens the rate enhance.



H. MASKILL

Chemistry Department,  
University of Stirling, UK