

Better safe than sorry

SIR — I accept that if Enoch Powell's Unborn Children (Protection) Bill, for which I voted, becomes law it will obstruct and divert the course of research on the physiology of fertilization and implantation. But neither the Warnock committee, nor the Royal Society evidence to it, nor the Medical Research Council comments on its report, seemed to me to take sufficient account of the pace of current research in mammalian embryology and molecular genetics. Here most of the work is done on the mouse and other animals, with much of the most important fundamental work on the control of the structure of the embryo being done on the fruit fly. Many processes of development are similar across a wide range of species.

It seems unlikely that the fruits of such research will be a sharp distinction between a well-defined range of severe genetically based abnormalities such as Down's syndrome and a "normal" genetic make-up. There seems more likely to be a continuous distribution of manifold genetic variations with structural and functional consequences with varying social acceptability.

Shall we then reject an embryo which seems likely, say, to have a tendency towards schizophrenia, without our being able to tell whether there may be a genetic association with some less detectable tendency such as intelligence or aesthetic sensitivity? Would we wish to allow individuals, or the Secretary of State, or a medical panel such choices? Yet no sooner do we have the technique of *in vitro* fertilization available than the most pressing arguments are being put forward for developments in clinical research and practice to help with many clinical and humanitarian problems by refinements in the technique and its mode of use. Within the next few years, which will be the life of the Powell bill, the problems apparently susceptible to such treatment may well extend over wide areas of human formation and behavioural tendencies, affecting most people and most of life.

Is it not wise to explore much more thoroughly the mechanisms of genetic selection and manipulation before rushing in to apply them prematurely in ill-understood ways to human embryos? Is it not wise then to allow society time to think through the legal, social, moral and religious questions raised? That is certainly the overwhelming view of the lay public to whom we are answerable in the House of Commons. Those who want a greater freedom to experiment, for entirely understandable reasons, are playing directly into the hands of forces hostile to science.

There is a danger of building up a public backlash against science as a whole that will be more damaging, even within embryology and developmental biology, than any such restrictions as those of the Powell

bill. Within a fortnight of the vote on the bill, at the annual lunch of the Parliamentary and Scientific Society, Sir Keith Joseph, Secretary of State for Education and Science, was using it to take the heat off criticisms of his slaughtering of British science, sentimentally lecturing the assembled scientists about their need to take moral considerations into account in their research. It is not morality that the scientists lack, but political guile.

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Yellow rain

SIR — In their detailed letter on the yellow rain controversy, Rosen *et al.*¹ confound their own case for chemical warfare in South-East Asia. Contending that "people indigenous to the area collected and turned in anything that was yellow, in spite of the fact that yellow rain attacks were rare by mid-1982", the authors discredit the principal source of eyewitness testimony and of environmental samples, including those in which they have reported the presence of tricothecene mycotoxins. One must be suspicious of the assertion that Hmong refugees once provided authentic samples and testimony from chemical warfare attacks and at some arbitrary time ceased to do so. If we hold Rosen *et al.* to their statement, native witnesses might well have dissembled in their accounts of chemical warfare and turned in unauthentic samples at any point from 1978 to the present.

The Hmong interviews on yellow rain, which Rosen *et al.* have obviously not consulted, offer numerous accounts of chemical attacks both before and after mid-1982. These interviews, conducted from 1979 to 1983 by a variety of agencies (refs 2-4 and R. Haruff, personal communication), show a persistent pattern: the warfare scenarios, including the repercussions of illness and death, vary considerably in content and scope, while the purported chemical warfare agent seen on the ground is invariably described as yellow and matches bee faeces⁵. While the interviews by no means offer unequivocal proof of chemical warfare, they do represent the combat experience of Hmong guerrillas in Laos.

Further, the interviews suggest Hmong refugee accommodation to their US patrons' interest in building a case against Soviet influence in South-East Asia. As the bee faeces theory implies, the transformation of Laotian attacks on the Hmong into the metaphor of yellow rain may have occurred early in the post-Vietnam War phase of US-Hmong relations⁵, leading refugees to procure descriptively appropriate samples whose aetiology was as much a mystery to them as

to Western investigators.

The complex political vulnerability of the Hmong, both in their flight from Laos and their dependence on US officials, is an integral part of the yellow rain story. If the controversy is ever to be resolved, it will require a more studious appreciation of Hmong perspective than evidenced by Rosen *et al.* in their facile repudiation of native testimony.

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1. Rosen, J.D., Cohen, H., Mirocha, C.J. & Shiefer, H.B. *Nature* 313, 271-272 (1985).
2. *Use of Chemical Weapons in Southeast Asia since the Vietnam War*, Hearings before the US House of Representatives Subcommittee on Asian and Pacific Affairs, December 1979.
3. *United Nations General Assembly Report A-37-2959*, 1 December 1982.
4. *An Epidemiological Investigation of Alleged CW/BW Incidents in Southeast Asia* (Surgeon General Branch, National Defense Headquarters, Ottawa, 11 August 1982).
5. Guillemin, J. *Hmong Interviews on Yellow Rain: Cultural Rules and Political Agendas in Refugee Reports* presented at the American Anthropological Association Meeting, Denver, Colorado, 21 November 1984.

Australian databank

SIR — A computer-based system (MBIS, the Molecular Biological Information Service) for use by molecular biologists within Australia, has been put on-line by the Division of Molecular Biology of the Commonwealth Scientific, Industrial and Research Organization (CSIRO). The system can be used free of charge by authorized individuals who are either directly linked to CSIRONET (CSIRO's computing network) or through a dial-up service. Dial-up Access is charged as a local call and transmission speed can be either 300 or 1,200 bytes per second.

The system is menu driven, allowing simple access to the services available. At present, nucleotide sequence databases from GenBank, the European Molecular Biology Organization and National Biomedical Research Foundation (NBRF) are on-line as well as the NBRF protein database and are updated as soon as new versions are made available.

Bibliographic information (GenBank) is also on-line. The software library can be used to retrieve, compare and/or analyse sequence data. The uploading or downloading of information is easily accomplished. Apart from programmes written at the division, software has been made available by R. Staden and M. Kanehisa.

An electronic Notice Board and separate electronic Mail System are available which we hope will aid better communications among molecular biologists in Australia.

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