

UK embryo research

Embryo protection bill resurfaces

In an unprecedented attempt to use the complex rules of House of Commons procedures, supporters of Mr Enoch Powell's Unborn Children (Protection) Bill failed by only the narrowest of margins to reintroduce it into the legislative timetable last week.

The bill, which would effectively ban all experiments on human embryos, was given a second reading in the House of Commons earlier this year by a large majority of 172 (see *Nature* 313, 618; 1985). But, partly because of lack of official government support, the bill was "talked out" at its third reading on 3 May (see *Nature* 18 April p.573). Normally, a private member's bill would, at this stage, have no chance of further progress, so the government seemed set to proceed separately with its own, comprehensive legislation on reproductive technology, based on the recommendations of the Warnock committee (see *Nature* 312, 389; 1984).

In an extraordinary fight back, however, Mr Andrew Bowden MP agreed to reintroduce Mr Powell's bill by exploiting his position at the head of the queue on private members' motions day, 7 June. He included the motion that the House of Lords should finish its scrutiny of the bill, if passed by the Commons, by 5 July, although such a request cannot be enforced.

Opponents of Mr Powell's bill, including the Archbishop of York, re-argued their case in the days leading up to the proposed debate. Dame Mary Warnock saw a "great tide of moral fundamentalism, sweeping across from America" as a genuine threat to proponents of licensed, controlled research. In fact the question was settled in parliament by procedural means. Mr Dennis Skinner MP found and made use of a rule that a motion to make a writ for a by-election (there is one outstanding) takes precedence over any other business, and ensured that the subsequent debate on the subject took hours rather than the usual few minutes. Only 16 minutes of time remained to debate Mr Powell's bill and this was ruled as inadequate to put the case for a debate, which otherwise might have lasted all weekend.

Meanwhile, the Medical Research Council and the Royal College of Obstetricians and Gynaecologists last week pressed ahead with their voluntary licensing authority for *in vitro* fertilization (IVF) and embryology techniques (see *Nature* 4 April, p.397) by publishing the authority's guidelines. These are based on the Warnock committee recommendations but each research programme will be licensed and projects will be considered individually. Programmes involving genetic manipulation or implantation of human embryos in other species will be refused licences. The conditions for receiving a licence include:

- Scientifically sound research on the pro-

cesses and products of IVF.

- Sound reasons why human, rather than animal, tissue is to be used.

- The aim of research must be clearly defined and relevant to clinical problems.

- Pre-embryos (dividing cells up to determination of the primitive streak) resulting from the research should not be transferred to a uterus except to establish a particular pregnancy.

- Signed consent for the use of ova and sperm to be obtained from both donors.

- Fertilized human ova not to be cultured *in situ* for more than 14 days.

- The means of embryo disposal to be specified at the outset.

Nuclear winter

Cautious support from SCOPE

INVESTIGATIONS into the environmental consequences of nuclear war by the International Council of Scientific Union's Scientific Committee on Problems of the Environment (SCOPE), whose report will be published in September, essentially confirm the results, and reflect the uncertainties, highlighted by the US National Academy of Sciences (NAS) last year (*Nature* 312, 683; 1985). The likelihood of a nuclear winter — a prolonged period of sub-zero temperatures in mid-northern latitudes following a major exchange of nuclear weapons — is thus given further support. This was the message that emerged at the 16th and final workshop of SCOPE-ENUWAR, held at the University of Essex this week and last week. But SCOPE has taken investigations a step further by considering the possible ecological consequences of the potential climatic effects.

Paul Crutzen, of the Max-Planck Institut für Chemie, a member of the steering committee, emphasized that the SCOPE study differs from its predecessors in that, instead of defining an exact war scenario as a starting point, such as the 6,500 megaton baseline case adopted by NAS, it has considered the destruction of a variety of proportions of the available combustible material and the injection of tonnages of smoke into the atmosphere consistent with a several thousand megaton nuclear war. Taken together with the improved general climatic models which now incorporate, in three dimensions, the interactive feedback between smoke plumes and winds, this should enhance the credibility of suggestions of a nuclear winter, according to S. Schneider of the US National Center for Atmospheric Research.

What has become clear, said Crutzen, is that the proportion of soot produced in urban and forest fires following a massive nuclear attack — the "blackness" of the smoke — is perhaps the most important factor. This in turn is dependent on the type

The voluntary guidelines are particularly appropriate now, as the government has announced that it will not introduce legislation in the next parliamentary session — that is, for at least a year. The popular support for Mr Powell's bill means that the government would be under considerable pressure to include his proposal in any legislation it seeks to introduce.

The tortuous progress of Mr Powell's bill contrasts strikingly with the smooth passage of Mr Norman Fowler's emergency bill to ban commercial surrogacy, which received three readings in the House of Commons between 28 March and 13 May. It is due for a second reading the House of Lords on June 14. The bill bans commercial surrogacy agencies and advertising of and for surrogacy services.

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of fires foreseen, with urban and industrial areas being more significant than forest fires. At the end of the day, SCOPE's "baseline case" of an attack on 30 per cent of the combustible material in the developed world produces less smoke than the 6,500 megaton borderline case of NAS, but it is blacker, so the resulting effective optical depth is about the same (4.5 for SCOPE, 3.2 for NAS).

The most important unknowns in this estimate are the nature of the smoke from burning oil stocks, and the physical and chemical processes that could affect particles in individual smoke plumes. Little is known of what happens when an oil pool is set on fire, although experiments with pools up to 50m across suggest that the degree of ventilation is the crucial factor in determining the relative proportions of incompletely burnt hydrocarbons, elemental carbon and gaseous oxides, that is, how dirty the smoke will be.

The NAS and SCOPE studies both highlight the lack of knowledge of processes operating in discrete plumes (up to 50 km across). If mesoscale processes tend to cause particles to agglomerate, this will clearly increase the rate of removal by gravity ("rainout") and may affect the optical properties of smoke plumes. Discussions at the workshop focused on two possibly opposed effects. First, the interaction of the plume with local weather conditions may produce more precipitation than is usually foreseen, which could wash the particles out or cause agglomeration, thereby decreasing the amount of smoke reaching the stratosphere. On the other hand, meso and microscale processes within plumes may increase the lofting of smoke, thus putting more particles into the upper atmosphere.

As Barrie Pittock of CSIRO Atmospheric Research, Australia, stressed, escape of soot into the stratosphere could cause marked climatic effects in the