In vitro fertilization

Research in Victoria threatened

Melbourne

THE state government here in Victoria has virtually brought to a halt research on *in vitro* fertilization (IVF). The Infertility Medical Procedures Act, which came into force in August, carries penalties of up to four years' imprisonment for those carrying out certain types of research; procedures that entail the destruction of, or damage to, a living embryo are forbidden.

Dr Alan Trounson, head of the research group at the Centre for Early Human Development at the Queen Victoria Hospital here, says that his 12-member team will go overseas within six months unless it can be exempted from the provisions of the law. This will be especially ironical because the collaboration between Trounson and Professor Carl Wood, head of obstetrics and gynaecology at the hospital, is widely believed to have given Australia an outstanding position in IVF techniques. The team was the second in the world to deliver a 'test-tube baby' and the first to engineer a successful pregnancy from a frozen embryo.

The essence of the new act is that a human egg once fertilized must be allowed to develop to maturity. Trounson says the law gives a fertilized egg the same status as a newborn baby. Cloning of embryos is also forbidden. Embryos may be created only at the request of couples enrolled in an IVF programme, in which case embryos must be implanted in the woman and reared to maturity.

The law may allow some observations on spare embryos, but these are likely to be embryos which have been frozen and which the prospective parents have decided not to use. Proposals for such investigations will have to be approved by the Standing Review and Advisory Committee on Infertility chaired by Professor Louis Waller, who was also chairman of the committee that recommended the new law to the government of Victoria (see *Nature* **311**, 289; 1984).

Trounson says that the law, as it stands, entirely prevents the assessment of experiments researchers wish to carry out. He cites as an example a proposal to investigate the effects of freezing on human eggs, which are more liable than embryos to be damaged, which is now being considered by the Waller committee. Trounson says that the only way of assessing the viability of unfrozen eggs is to attempt to fertilize them. The researchers say they are in a cleft stick: their own ethics committee will not allow them to use untested techniques clinically, but the new law and the Waller committee insist that an embryo can be created only if intended for clinical use.

Trounson's one ray of hope is that the section of the bill forbidding the use of embryos for research was not included in the enacted version, but is the subject of further representations to be made to the state parliament. Trounson's present frustration is the length of time being taken to discuss what he considers his team's legitimate need for an exemption from the strict provisions of the disputed clause. He says that "if you have an inflexible law and an inflexible committee, there is no chance of a resolution".

This is the spirit in which Trounson has spelled out his six months deadline, which he says is the longest time for which he can hope to keep his team together. One member has already left, and Trounson says that none would have difficulty in finding a job elsewhere. But Trounson would prefer to keep his team intact. He says there have already been firm offers from Britain and Canada.

Another IVF research group has already gone. In August, Dr John Kerin's IVF research team of five from the University of Adelaide in South Australia moved to Los Angeles to join the group headed by Dr Richard Marrs at the University of California, Los Angeles, and based at the Cedars Sinai Medical Center. Kerin's group was not forced out of Australia by the prospect of law changes, but lured away by the offer of attractive working conditions; as yet, there is no legislation on IVF in South Australia.

That may not be the case much longer. Legislation is now being considered by the federal parliament to extend Victoria's restrictions nationwide. A Senate committee report on the Human Embryo Experimentation Bill earlier this month recommended imprisonment for the destruction or cloning of embryos. Although the report supports "therapeutic" research intended to improve the chances of the development of the human embryo, it would ban "non-therapeutic" or destructive experimentation. The terms "therapeutic" and "non-therapeutic" are taken from the Helsinki convention on human experimentation. What researchers fear is that this may be yet another Catch-22.

Charles Morgan

US engineering

Defence demands no problem

Washington

CONCERNED that the current military build-up might be swallowing up available engineering talent, leaving civilian industries high and dry, a panel of the National Academy of Engineering last spring began an investigation of how well the supply of engineers was meeting the demand. In its final report*, released last week, the panel concluded not only that defence needs for engineers are not overwhelming the supply, but that the current increase in defence outlays is not a large one by historical standards.

With the advent of the Strategic Defense Initiative (SDI) in addition to the Reagan administration programme to restore US military strength, conventional wisdom held that young engineering talent would inexorably be drawn to lucrative careers in defence industries. But Harrison Shull of the University of Chicago, who chaired the panel on engineering labour markets, says this has not happened. Except for certain subspecialties companies are not having trouble filling technical positions. Traditionally, between 20 and 30 per cent of engineers work in defence-related industries, a figure that will probably remain stable.

The panel found salaries in defence and civilian industries are equivalent in most areas, suggesting no need to compete for talent. The panel reached no firm conclusions about whether the "best" engineers were evenly spread through industry, but noted that there is today less aversion to defence projects than there was two decades ago. Although Defense Department projections may point toward a continued increase in defence spending, budget realities suggest that defence

spending as a percentage of gross national product has levelled off. If that is so, then the greatest impact of the recent defence build-up has passed with no major disruption of the engineering marketplace.

If the current situation is stable, signs for the future are harder to interpret. Neither available databases nor predictive models are adequate to assess potential problems in the supply of engineering talent. The international character of engineering services must also be considered in future evaluations of the problem. Shull notes that some US companies have already begun to look overseas for solution to engineering problems.

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* *The Impact of Defense Spending on Nondefense Engineering Labor Markets (National Academy Press, Washington, DC).*

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