Briefings

edited by CONSTANCE HOLDEN

Lords Approve Embryo Research

Research on human embryos up to 14 days old received strong backing from Britain's House of Lords in early February when, in a remarkably large turnout, the Lords voted 234 to 80 to allow the work to continue. What the Lords actually approved was one of two versions of a bill covering in vitro fertilization (IVF) and related research; the other version would have banned all research on human embryos.

At present IVF in Britain is regulated on a voluntary basis. The new legislation provides a mandatory legal framework for controlling the clinics where IVF is done and also research on human embryos, much of which is aimed at improving the sucess of IVF techniques.

Opponents of the measure contended that research on embryos could never cure congenital disorders. Some also raised the "slippery slope" specter, saying the measure would open the way to do research on human embryos older than 14 days.

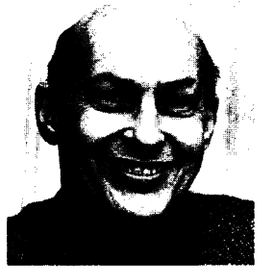
Supporters pointed out that it was through research that in vitro fertilization offers hope to infertile couples and to parents at risk of having a handicapped child; research has improved IVF techniques and extended its benefits, they said.

Baroness Warnock, whose 1983 inquiry into in vitro fertilization formed the basis of the legislation, said "it was a much bigger majority than I expected." The proposals have still to be debated and passed in the House of Commons.

The Next "Nobel"?

Winners of this year's Japan Prize were announced this month. Never heard of it? The Science and Technology Foundation of Japan, which sponsors the prize, would like to change that. In fact, its unabashed goal is parity with the hallowed Nobels.

This year's recipient in the field of the technology of integration is artificial intelligence expert Marvin Minsky of the



MIT Photo by Donna Coveney

Marvin Minsky

Massachusetts Institute of Technology, who will get his award—and an audience with the emperor—in Tokyo in April.

In this year's other category, earth science, the prize is split among three men honored for their role in the plate tectonics revolution: Jason Morgan of Princeton University, Dan McKenzie of Cambridge University, and Xavier Le Pichon of the College de France in Paris.

The Japan Prize, now 6 years old, is awarded in two fields each year. And if money is the main criterion, they are already on a par with the Nobels. This year's awards were worth 50 million yen ($345,000) apiece.

The Nobel and Japan prizes share one other characteristic: they don't usually go to Japanese. So far, of 17 winners, 11 were Americans and one was Japanese. Only five Japanese scientists have won Nobels.

NRC Weighs in on Precollege Math

A new report from the National Research Council's Mathematical Sciences Education Board calls calculators and computers the factors with the greatest potential impact on mathematics education—and lashes out at educators who resist their use.

The report's recommendations include the usual calls for more relevance, more participatory learning, more emphasis on concepts as opposed to rote learning, new textbooks, and more teacher education.

But "of all the influences that shape mathematics education," it says, "technology stands out as the one with greatest potential for revolutionary impact."

According to the report, some mathematicians and teachers oppose use of calculators and computers. Calculators, these folks say, are an "inappropriate technical crutch"; the time spent learning to use computer programs detracts from learning basic math skills.

Dead wrong, the committee says. Technologies vastly expand the range of problems that can be addressed by students, they save teachers' time, and they render accessible sophisticated concepts that otherwise might never be touched on. All mathematics classrooms should have computers, and "calculators should be used in school mathematics from kindergarten on."

At the same time, says the committee, there is a need to reduce the time spent on teaching "traditional arithmetic skills," which "no longer serve a compelling purpose." That would leave more time for developing "higher order thinking skills" and allow students of uneven ability to find something they're good at rather than getting bogged down in the basics.

Yeast Lib

Liberation movements have a way of creating an environment that isn't exactly conducive to humor. But an exception is reported by the UC Berkeley's Coalition for Animals and Animal Research.

The Prince and the Forests

Calling us the "last generation that can save the rain forest from total destruction," Britain's Prince Charles has called for an international convention to preserve and protect tropical forests. The prince made his proposal at a recent lecture sponsored by the Friends of the Earth Trust and the Kew Gardens in London. In the same lecture he called for a boycott of tropical timber.

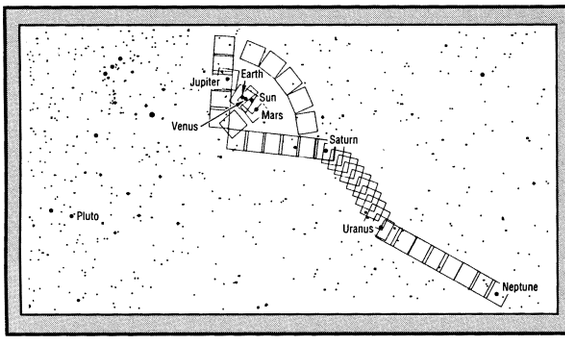
R. Mittermeier

Yanomamo. *Amazon native.*

The convention Charles has in mind would develop a rational basis for sustainable use of forests that would protect biodiversity and preserve the rights of human inhabitants. It would also set targets for reduction of carbon dioxide emissions and devise new funding mechanisms for forest preservation.

Charles stressed the importance of involving rain forest dwellers and their knowledge about the environment in any conservation efforts. He said he found it "disturbing" that the International Tropical Timber Organization has ignored the "rights and needs of indigenous forest dwellers."

Asked what ordinary people could do to save rain forests, Charles advised a consumer boycott on all tropical timber, noting that there is no way to ascertain which timber has been sustainably harvested. The recommendation has drawn heavy fire from the British Timber Trade Federation, which says a boycott would hasten destruction by reducing the value of the forests to the producer nations.



Planetary portrait gallery. *Voyager 1 celebrated Valentine's Day by taking an unprecedented set of pictures of most of the planets in the solar system. The rectangles represent areas to be photographed by the spacecraft's wide-angle camera. The images will be made from a position 32 degrees above the ecliptic plane in which the planets orbit the sun. Launched in 1977, Voyager is now about 6 billion kilometers from Earth.*

Among their recent incoming mail was a flier announcing "OUR NATION'S SHAME—EVERY TIME A LOAF OF BREAD IS BAKED, APPROXIMATELY 150,000 YEASTS ARE *KILLED*. Come to the award-winning 1987 film, 'The Very Small and Quiet Screams'—a cinematic electron micrograph of yeast being *baked*." Among the sponsors: the "Anaerobe Liberation Front," "People for the Ethical Treatment of The Yeasts (P.E.T.T.Y.)," and "Single Cell Rights Eukaryotic Action Movement (S.C.R.E.A.M.)."

Global Warming Petition

About 700 heavy hitters from the scientific community—including close to half the members of the National Academy of Sciences and 49 Nobel Prize– winners—have signed a petition urging President Bush to pay serious attention to the dangers of global warming.

The appeal, generated by the Union of Concerned Scientists (UCS), was delivered to the White House a few days before the early February meeting of the Intergovernmental Panel on Climate Change.

The Administration says more study is needed to ascertain whether global climatic change has really begun. But UCS chairman Henry Kendall, physics professor at the Massachusetts Institute of Technology, noted that "the large number of prominent scientists signing this appeal should remove any doubt that global warming is taken seriously within the upper echelons of the scientific community."

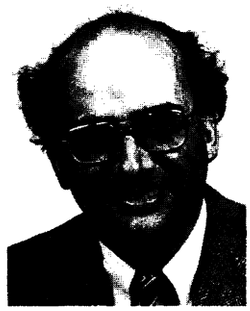
Legal Drugs: A View from Neuroscience

The debate among scholars over drug legalization has been polarized partly along disciplinary lines. Those in favor (such as Milton Friedman and Ethan Nadelmann) have tended to come from economics or political science. Among those whose work is more closely related to biology, such as treatment professionals and addiction experts, the response is generally unfavorable.

Now, Michael Gazzaniga of Dartmouth Medical School, a neuroscientist noted for his contributions to split-brain research, has joined those who contend that legalizing narcotics would reduce crime and would not increase drug abuse.

In an interview published in the 5 February *National Review*, Gazzaniga says public perception of "crack-based misbehavior" is exaggerated. Crack doesn't necessarily cause violent behavior, he says, it just looks that way because criminals are more likely to be drug users.

Nor are there any "solid data" supporting the widely held belief that crack is more addictive than other drugs, says Gazzaniga. "The casual-to-moderate user very clearly wants to stay in that category." The "purported" higher rate of addiction may be a function of the low cost of the drug.



Michael Gazzaniga

In Gazzaniga's view, "illegality has little if anything to do with drug consumption. . . . There is a base rate of drug abuse, and it is achieved one way or another."

Who Gets a New Liver?

If only one liver is available for transplantation and two patients need it, who should get it first—a young mother with liver cancer, whose likelihood of surviving with a transplant is only 20%, or a 65-year-old alcoholic, whose chance is 80% assuming he stops drinking?

That was the kind of excruciating medical and ethical dilemma discussed at a recent 2-day meeting sponsored by the advisory board of the National Institute of Diabetes and Digestive and Kidney Diseases.

Liver transplantation has become an established therapy: last year 2000 people got new livers. Yet because of a shortage of livers for donation, 8000 people remained on the waiting list.

The choices are so painful that everybody is trying to avoid being the one to make them. Health insurance carriers have failed to come up with any uniform policies. Three states have opted out of the dilemma by withholding Medicaid coverage for all transplants excepting corneas and kidneys.

And doctors don't want to be the ones to set the priorities either. Indeed, surgeon Thomas Starzl of Pittsburgh's Falk Clinic said that doctors should not be deciding who gets transplants, but rather should work to expand the benefits: "dividing the pie should not be our business, but making the pie bigger and better should be."

Several physicians said that if exclusionary criteria were too narrow, they could inhibit research aimed at extending the benefits of liver transplantation. "There's no point cutting the pie when it's incompletely baked," Starzl said.

Tritium Production

The aging heavy water reactor at the Department of Energy's Savannah River weapons plant, which makes tritium for nuclear warheads, needs to be replaced. Congress has toyed with the idea of replacing it with linear particle accelerators instead of new heavy water reactors. But several recent reports say the idea faces big stumbling blocks: time, money, and power.

In one report, "Accelerator Production of Tritium," the energy department estimates that an accelerator would cost between $4.5 and $7 billion; a new heavy water reactor could be built for about $3.2 billion. The report also says designing and building an accelerator of the required capacity would probably take a decade.

The General Accounting Office expressed its doubts in a report called "The Feasibility of Using a Particle Accelerator to Produce Tritium. Their report notes that part of the technology's advantages could be lost if the electricity needed to run the facility—some 900 megawatts—is supplied from a new nuclear power reactor.

Accelerator technology nonetheless has potential advantages—tritium can be produced more safely and simply than with a nuclear reactor, and there would be substantially less nuclear waste.