RANDOM SAMPLES

edited by CONSTANCE HOLDEN

Embryo Cloners Jumped the Gun

The announcement that they had cloned human embryos garnered researchers at George Washington University in Washington, D.C., a flood of publicity last year. Now comes the news, revealed earlier this month by National Public Radio, that the work was done without prior approval from the university committee that approves research on human subjects.

According to a university investigation, reproductive biologist Jerry Hall began the research several years ago, but didn't tell his supervisor, physician Robert Stillman, until February 1993. Stillman applied for approval from the institutional review board (IRB) 2 months later, but didn't reveal that the work had already been done. "I thought [that] would bias their judgment," he says. Stillman told university officials the details—including the absence of informed consent from the egg and sperm donors—in November 1993 after the experiment had received extensive publicity.

Hall would not speak on the record to *Science*, but he did confirm a statement he made last spring to the effect that his superiors told him IRB approval was not needed for research on "sperm, eggs, or abnormal embryos." Stillman says many institutions do not require approval for research on "discarded [genetic] material," but George Washington is not one of them.

Last January the school notified Hall's funding agency, the National Institutes of Health, of the ethics breach. NIH found "serious noncompliance" with its guidelines on human subjects research. Gary Ellis, head of the NIH Office of Protection from Research Risks, says the university compounded its offense by taking 2 months to notify NIH. But NIH is now happy with GW's response, which includes stepped-up attempts to teach its researchers the ethical rules. Stillman is to be closely monitored for 2 years. Hall quit in September to go into private practice in fertility services.

University President Stephen Trachtenberg also told NIH last June that he had ordered all the research data to be destroyed. Ellis says this was a largely symbolic step not required by NIH.

ROBERT PECK

Probing the blue pearl. A joint U.S.–Mongolian scientific expedition camped at unexplored lake last fall.

Western Science Finds a Pearl

An ancient lake in the mountains of Mongolia has been opened up to Western researchers. It's Lake Hovsgol, locally known as the "blue pearl," whose waters offer an unusual opportunity to study the results of millions of years of evolution. "Hovsgol is very pristine and very old, so its evolutionary sequence has not been interrupted," says Bill Chang of the National Science Foundation. NSF funded the first expedition to the lake by a Western scientist, Clyde Goulden of the Academy of Natural Sciences of Philadelphia, who visited this fall.

Most lakes were born during the last glaciation less than 20,000 years ago. That's why the world's few ancient lakes—Tanganyika and Victoria in Africa and Baikal in Siberia—have served as magnets for limnologists and evolutionary biologists. Hovsgol, like Baikal 200 miles to the northeast, was formed by the movement of continental plates 40 to 60 million years ago when India ran into Asia. The lake is about 120 kilometers long and 260 meters deep.

Because Mongolia has been closed to Westerners for decades, Hovsgol is a new discovery for them. "I've been in the field for 25 years, and I didn't even know the lake existed," says Goulden. Local villagers are chiefly Buddhist or shamanist and don't eat fish, so the lake has never even been fished, he says. If it's anything like Baikal, biologists may discover a number of new species, allowing them to test theories of the mechanisms of speciation. "It's one of the world's really interesting and mysterious lakes," says ichthyologist Gerald Smith of the University of Michigan. Goulden is seeking funds so he can return next summer.

Accelerated Reactor Plans

Since handing over the reins at CERN last year, Carlo Rubbia, the ebullient former director of the Geneva-based European particle physics center, has been working on his idea of driving a nuclear reactor with a particle accelerator to generate power. Last week the Italian Nobelist announced at a CERN seminar that, after a year of successful experiments and studies, he's now seeking 100 million ECUs ($121 million) from the European Union for the next stage—planning a 100-megawatt pilot plant.

Rubbia said he is convinced that such a reactor fueled by thorium—which is more abundant than uranium—would be cheaper and safer than conventional nuclear reactors (*Science*, 26 November 1993, p. 1368) and would produce less radioactive waste.

Unlike conventional reactors, Rubbia's proposed machine will contain too little fissile material for a chain reaction. When bombarded with neutrons produced by a particle accelerator, the thorium is transformed into uranium-233. The uranium atoms split, emitting energy and more neutrons. That promotes more fission and transforms more thorium into uranium, but the reaction still needs the extra neutrons to keep going. The team tested the theory using CERN's proton synchrotron to generate neutrons and a model nuclear reactor core borrowed from the Polytechnic University of Madrid. According to CERN physicist Robert Klapisch, the device—as predicted—produced 30 times more energy than was put in.

The idea is not new: Teams in Japan and at the Los Alamos and Brookhaven National Laboratories in the United States have also developed their own approaches to the problem. Indeed, Los Alamos team leader Charles Bowman says, "We believe our technology is further advanced" than Rubbia's in that it continuously processes the fuel to remove wastes. Both the CERN and U.S. projects are touting their clean credentials in attempts to win funding for pilot plants. "Once you've built a 100-megawatt plant," says Klapisch, "then you know what you're doing."

Math Slump Deepens

Unemployment among new math Ph.D.s hit a record high this year—14.2% as of late September—according to an annual survey conducted by three mathematics societies and headed by mathematician John D. Fulton of the University of Missouri, Rolla. That figure topped the record high of 13.7% in 1975. Fulton says the academic job market is stagnant, and openings in business and industry have declined since last year.