RANDOM SAMPLES

edited by CONSTANCE HOLDEN

Brazil Passes Gene Law

Brazil's newly elected president, Fernando Henrique Cardoso, approved the country's first law regulating genetic engineering on 5 January. Known as the "biosafety law," it charges a special commission with formulating rules governing the release of genetically altered organisms into the environment. The new law also bans manipulation of human germ cells, gene therapy for conditions not caused by defective genes, and research using human embryos.

Brazil's law is fairly strict as such measures go, but according to one of its authors, Popular Socialist Party Congressman Sérgio Arouca, "this is the law that Brazilian society wanted." Sérgio Danilo Pena, a geneticist at the Federal University of Minas Gerais and Brazilian head of the Human Genome Project, says, however, that the law has a potential major flaw: It would block the development of gene therapy for cancer or AIDS because, he says, "it involves in vivo manipulation of genes for diseases that cannot be reduced to a genetic effect." So far, though, no one in Brazil is working on human gene therapy.

The prohibition on work with embryos also lends itself to an interpretation that could hamper in vitro fertilization, says Nilson Donadio, president of the National Commission of Assisted Reproduction Techniques. He says surplus fertilized eggs, frozen for use in case the first try fails, might be classified as research materials and thus be illegal.

Researchers have up to 120 days to comply with the new law, which carries penalties of up to 20 years in prison. But although the law is now in effect, some critics say enforcement could be a problem: The commission that is supposed to regulate the relevant activities has not yet been created.

Sex and Fingerprints

Scientists have found one more small biological piece to fit into the puzzle of sexual orientation. Neuropsychologists at the University of Western Ontario say that gay men are more likely than straight men to show "leftward asymmetry" in the number of ridges in their fingerprints.

Jeff Hall and Doreen Kimura report in the December 1994 issue of *Behavioral Neuroscience* that dermal ridges are a sexually dimorphic trait—that is, men (including gay men) have more than women—which means they are among traits that may be influenced by prenatal hormones. In both sexes, the ridge count is usually higher on the right hand, but women are more likely than men to have a higher count on the left (leftward asymmetry).

Gay males, too, are more likely to have a higher left-hand count, Hall and Kimura found. They took fingerprints from 182 heterosexual and 66 homosexual men. While only 26 (14%) of the heterosexuals showed leftward asymmetry, 20 (30%) of the homosexuals did, comparable to the rate in heterosexual women. "Adextrality" (left- or mixed-handedness) also tended to be associated with leftward asymmetry more often in gays than in heterosexuals. This, say the researchers, "suggests that early processes that contribute to handedness may be different for the homosexual and heterosexual populations."

Hall says this notion is bolstered by "dichotic listening" studies in the same lab, in which different words are piped simultaneously into a subject's right and left ears. Subjects usually remember more of the right-ear words, as that is the ear connected to the left hemisphere's speech centers. Hall says homosexuals with leftward finger ridge asymmetry had "less lateralized" scores—suggesting that speech as well as handedness is represented in both sides of their brains.

Simon LeVay of the Institute of Gay and Lesbian Education in Los Angeles, who has reported small differences in the hypothalamus of homosexual males, says that the finding "further bolsters the notion that sexual orientation is influenced by processes going on during sexual differentiation," and that some of these processes are mixed up with those that create lateralization in both body and brain.

GLENN MROZ

Good for growth? Right-of-way for radio antenna cuts through hardwood stands.

EMF Good for Trees?

While people worry that exposure to the electromagnetic radiation from power lines could cause cancer, scientists have discovered that a long radio antenna in a Michigan forest—which generates no more electromagnetic radiation than a large household appliance—seems to have stimulated growth both in nearby trees and in river algae.

Research completed in 1993 but publicized only last fall indicates that the U.S. Navy's 90-kilometer-long Extremely Low Frequency (ELF) antenna, set up in 1986 to communicate with submarines, is invigorating neighboring plant life. The researchers, led by biometrician Dave Reed at Michigan Technological University, found that the radiation seemed to affect growth in three tree species: Aspen and red maples developed thicker trunks—comparable to what fertilizer might achieve—and red pines grew taller when compared with trees on a control plot 50 kilometers away from the antenna. The work was published in the December 1993 issue of the *International Journal of Biometeorology*, but was only publicized last November by Michigan Tech. Another unpublished and unpublicized study, also completed in 1993, has found that the ELF's influence was not limited to land. Aquatic ecologist Thomas Burton of Michigan State University says he compared algae living under the antenna at upper Ford River with algae downstream where the electromagnetic fields were only 10% as strong. "Our findings basically go along with the tree findings," he says. "Algal chlorophyll production is increased by electromagnetic radiation."

The mechanism for these effects remains a mystery. John Stather, expert in non-ionizing radiation at the U.K.'s National Radiological Protection Board, calls the results "intriguing" but in need of replication. Although laboratory studies have suggested that electromagnetic fields can influence growth in both plant and animal cell cultures, the effects of such studies, "when properly controlled," have usually turned out to be inconclusive, he says.

Movement on NIH Behavioral Front

The new National Institutes of Health (NIH) Office of Behavioral and Social Science Research may obtain a director within this century. Since nominations closed last October, a list of more than 90 contenders has been whittled down to four, according to Louis Sibal of the NIH extramural research office. Each candidate was scheduled to spend a day at NIH this week, crowned by an audience with NIH Director Harold Varmus. Sibal expressed confidence that "some decisions will be made" at the end of the week.

Many private groups have been impatient with the glacial pace at which the office—created by Congress in May 1993—is getting launched. But Sibal says, "If you knew the NIH, this is moving very fast."