RANDOM SAMPLES

edited by CONSTANCE HOLDEN

New Blood Charges In Paris

France's contaminated blood scandal has entered a dramatic new phase. Several scientists and politicians have been charged with "complicity in poisoning" for their role in allowing the national blood supply to go untested for HIV. Last week, cell biologist François Gros—a former scientific counselor to the prime minister and one of the country's best-known scientists—and physician Claude Weisselberg, a former adviser to the health ministry, were added to the roster of the accused. And late last month, former French Prime Minister Laurent Fabius and two of his former ministers were called before a judge to answer similar charges, stemming from decisions they allegedly made in the mid-1980s to delay universal testing of blood supplies for the AIDS virus.

This new round of charges greatly extends the scope of the affair, which until now had been limited to the provision of untreated blood products to French hemophiliacs. Four physicians were convicted in that episode, and two were sent to prison (*Science*, 12 August, p. 859).

The focus now is on the critical period between May and July 1985, when the French government allegedly kept an HIV antibody test manufactured by the American firm Abbott off the market while waiting for the French firm Diagnostics Pasteur to get its own version ready. During this time, several hundred people could have received tainted blood transfusions.

The French press has long treated as a "smoking gun" the minutes of a May 1985 meeting of government AIDS advisers, presided over by Gros, in which participants discussed the threat to French commercial interests posed by the American test. But Jean-Baptiste Brunet, one of a small group of doctors who urged early HIV testing and is now director of the European Center for the Epidemiological Surveillance of AIDS in Paris, says technical and logistical problems were also factors in the delay. "Could [testing] have begun earlier?" asks Brunet. "Maybe so. ... But to charge someone with poisoning means accusing them squarely of murder." A special magistrate will now conduct an investigation to assess the charges and decide whether the accused should stand trial.

Building biology. Almost-completed permanent premises of ICGEB New Delhi branch at Jawaharlal Nehru University.

World Biology Center

Last week marked the official opening of an international research center in Trieste, Italy, whose purpose is to strengthen the research capacity of developing countries. The International Center for Genetic Engineering and Biotechnology (ICGEB), which started under the aegis of the United Nations Industrial Development Organization (UNIDO), now has enough support to strike out on its own. Its goal, says director Arturo Falaschi, is to train scientists from the developing world who will work at ICGEB on subjects related to industrial and agricultural development and then bring their skills back home.

ICGEB has two lab complexes: a 140-person institute in Trieste and one in New Delhi that houses around 70 scientists. There are also some 20 affiliated research groups in ICGEB's member countries—32 nations, mostly from the developing world, but also Italy and several eastern European countries.

The Trieste and New Delhi labs have been operating for several years, but until now ICGEB was governed by UNIDO, whose full membership had to approve all major decisions. The breakthrough came in February, when the treaty establishing the center finally got the 24 ratifications necessary for independence. Falaschi says the center's new status will make it much easier to win grants from industry and from bodies like the European Union. And it will have more financial security. Currently, ICGEB's $12-million-a-year budget comes from the governments of India and Italy. By 1999, this should grow to around $15 million, with ICGEB's other member states contributing a total of $5 million a year. Falaschi hopes eventually to get developed countries on board as well.

$86 Million for Biology Classes

The Howard Hughes Medical Institute (HHMI) has awarded what it calls "the largest series of grants by a private organization in U.S. history."

On 4 October HHMI announced that $86 million in 4-year grants of between $1 million and $2 million each is being awarded to 62 doctorate-granting institutions to improve undergraduate biology education. The awards are part of a program started in 1988 which has so far committed $290 million to 213 colleges and universities. The money is for undergraduate research, including drawing more females and minorities into science, equipment and laboratories, and science education activities with local elementary and high schools.

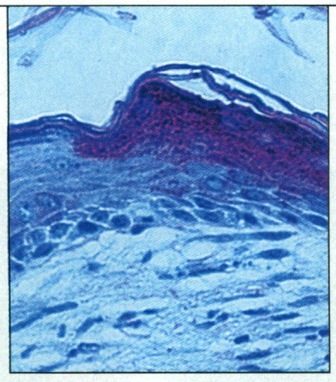
HHMI claims that the program has enabled the appointment of new faculty members, supported the development of thousands of new courses, and enhanced science education for 37,000 precollege students. The institute is especially proud of the University of Arizona, says HHMI spokesperson David Jarmul. With a 1989 HHMI grant of $1.5 million, it set up an undergraduate research program that by its third year in operation drew some 114 students. Michael Wells, head of the university's biochemistry department, adds that the last 5 years have seen "a 500% increase [from about 12 to 75 a year] in the number of students going on to graduate school as a result of this program." Adds Wells: "With a multi-year research experience, students become very, very good in the lab," and that encourages them to apply to grad school.

Next-Generation Patch?

Our skin, usually a barrier to invaders from the world outside, may prove to be a valuable point of entry for therapeutic genes. A team of biologists at the State University of New York (SUNY)–Stony Brook, led by Lorne Taichman, reports that it has successfully delivered a genetically engineered protein into the bloodstream of mice by grafting human skin cells containing a gene for that protein.

The SUNY group reports in the October issue of *Human Gene Therapy* that their mice expressed a recombinant version of apolipoprotein (apo-E), a protein that ferries cholesterol out of the bloodstream. Although apo-E is naturally secreted by human skin, getting more of it into the bloodstream could help stem cholesterol buildup as happens in atherosclerosis, says Elizabeth Fenjves, the paper's first author.

But it's the larger implications that are "exciting," she says. "If you had a disease where a protein was missing, theoretically you could take a small skin biopsy from the patient, grow those cells in culture, insert the gene ... and graft these cells back onto the patient. Now his own skin cells



Man-mouse blend. Cross section of area where human skin cells *(dark cells at right)* have been grafted onto mouse.

would secrete the missing protein into the bloodstream."

Previous attempts to introduce a gene into skin grafts—for instance, one for human growth hormone—had failed to deliver enough of the product into the blood or had only worked briefly. For their experiment, the Stony Brook researchers chose a genetically engineered version of the apo-E gene, which they modified so that its product would be distinguishable from the natural variety. They then grafted the skin cells onto athymic "nude" mice, which would not reject the human skin. It worked. The group found significant amounts of the exogenous apo-E protein in the mouse blood.

Now, says biologist Howard Green of Harvard Medical School, scientists need to find what it is about apo-E that allows it to get into the blood when other proteins don't. "it may be that apo-E has something analogous to a signal sequence that enables it to penetrate better," he says. If such a sequence were identified, "it might be possible to add [it] to any protein you want to express and have that secreted into blood as well," he says.

Sowing the Seeds of The New Botany

To keep up with scientific advances as well as rising global concerns about biodiversity, two New York institutions are collaborating in a program to train "a new breed of botanist."

The old-style botanist knows about plant physiology, ecology, and classification. But the New York Botanical Garden and New York University (NYU) contend that's no longer good enough. Plant scientists now need to know about everything from plant molecular chemistry to the economics in developing countries, according to NYU biology professor Gloria Coruzzi, who is co-director of the program. The National Science Foundation agrees, and is forking over $537,000 for five 5-year fellowships for what NYU says is the first Ph.D.-level curriculum of its kind—which includes training in molecular biology, anthropology, economics, conservation, and international law.

The new curriculum will focus in part on the search for useful new substances from unexplored biota. This pursuit has been dubbed "chemical prospecting" by Cornell University entomologist Thomas Eisner, who says of the new program: "I think it's tremendous." Old-style plant biology focuses on what all plants have in common, he explains, not what makes each unique. "In the game for survival, each plant comes up with its own chemical solutions. Knowing what these are—that's where the action will be." Eisner notes that while botanists are starting to wake up to an expanded role, the future has not yet dawned for zoologists, especially in invertebrate zoology, where there is "a tremendous chemical frontier" awaiting exploration.

Researching Romance

Behavioral geneticists have found that normal human behavioral traits, such as shyness, tend to be significantly influenced by the genes. But now they've found an exception: romantic love. Whether you are hot-headed, pragmatic, or neurotic in your relationships has more to do with your life experiences than your genes, say researchers at the University of California, Davis, who have produced what they call "the first behavior genetic study of romantic love."

Behavior geneticists gauge heritability by comparing fraternal twin pairs (who average half their genes in common) with identical twins. If a trait is highly heritable, identical twins will show about twice as much concordance as fraternals. In this case, psychologists Niels G. Waller and Phillip R. Shaver gave a battery of personality and attitude tests to 345 pairs of identical twins, 100 pairs of fraternal twins, and 172 spouses of twins. One of the tests categorizes a person in one of six "love styles." "Eros" people fall in love easily, for example; "Ludus" people won't settle down; "Pragma" people make rational choices; and "Mania" people are hysterical and jealous.

The research showed, as expected, that genes accounted for about 50% of the variance in personality traits. But in love styles, the researchers could find no genetic influence at all. There was little similarity between twins, and in some cases the identical twins were even less alike than were fraternal twins.

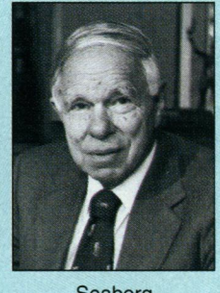
"I was very surprised by these results," says Waller. "I don't know of any other psychological domain where heritabilities are as low or nonexistent." This "remarkable" finding makes the study "unique from a behavior genetic standpoint," the authors write in the September issue of *Psychological Science*.

Psychologist Michael Bailey of Northwestern University notes that the finding is in some respects "paradoxical" in the face of evidence that sexual promiscuity among humans is partly heritable. Yet, he says "it makes sense evolutionarily," as "the more able you are to adapt to your environment the more successful you'll be." Psychologist Thomas Bouchard of the University of Minnesota adds that the study vindicates behavioral genetics research methods by demonstrating that they "can show environmental influences if they're there."

Getting a Place at the Periodic Table

Plans to name an element after Nobelist Glenn Seaborg have been abandoned after chemists decided that there is one crucial criterion he doesn't meet: He isn't dead.

The American Chemical Society announced last year that element 106, an artificial element with a half-life of 0.9 seconds that was first created 20 years ago, would be named after Seaborg in honor of his co-discovery of plutonium and nine other transuranic heavy elements. But the Commission on Nomenclature of Inorganic Chemistry, of the International Union of Pure and Applied Chemistry (IUPAC), resolved on 31 August that an element should not be named for a living person because "it [is] necessary to have the perspective of history in relation to these discoveries before such a decision [is] made." The Commission instead recommended that element 106 be tagged rutherfordium (Rf), after Ernest Rutherford, who contributed much to the knowledge of atomic structure and died in 1937. The recommendation, along with those for the remaining elements from 101 to 109, must be ratified at the IUPAC Council's biennial meeting next August. An IUPAC spokesperson says Seaborg will undoubtedly get another chance at immortality when other hinted-at but elusive elements are eventually nailed down.



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