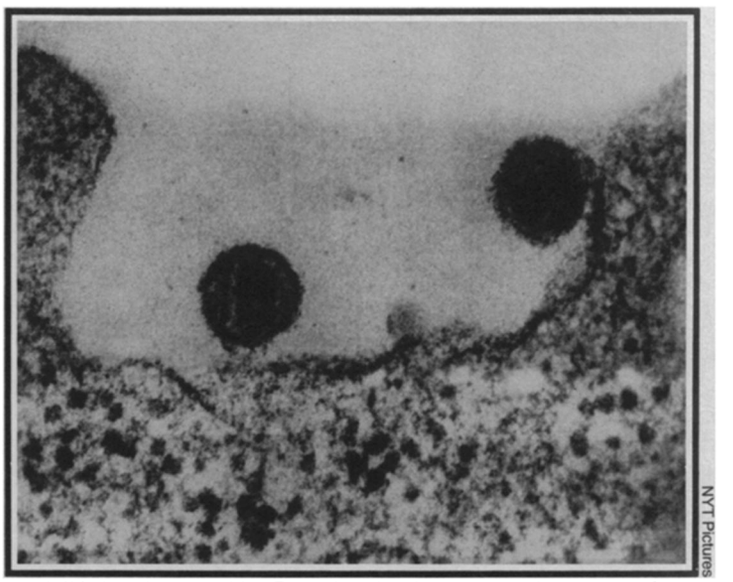
SPECIAL REPORT

# AIDS Research in France: Different Culture, Same Virus?

*In their dramatic announcement of the detection of a possible cause of AIDS (SN: 4/28/84, p. 260), U.S. researchers — intentionally or unintentionally — grabbed the spotlight from their French counterparts. Nearly a year ago, French scientists reported the discovery of a form of virus similar, perhaps identical, to that disclosed by the Americans last week. In an exclusive report for* SCIENCE NEWS, *the French researchers here reflect on their own work and discuss their relationship with their U.S. colleagues — a relationship that has been labeled as anything from a cooperative effort to a rivalry.*



NYT Pictures

*LAV virus is touted by French scientists as a major cause of AIDS. Last year, France ranked first among European countries in reported cases of AIDS. Still, the disease is far less prevalent in France than in the United States.*

By VICKY ELLIOTT

PARIS — There were some eyebrows raised at the Institut Pasteur last week, at the hullabaloo surrounding the announcement in Washington, D.C., of the latest advances by U.S. scientists in the search for the cause of Acquired Immune Deficiency Syndrome (AIDS). It remains to be seen whether the retrovirus that Robert C. Gallo of the National Cancer Institute (NCI) has called HTLV-3, for human lymphotropic retrovirus-3, is the same as the one first isolated a year ago in Paris and called LAV, for lymphadenopathy-associated virus. But researchers here are making no secret of their opinion — that the French made the same discovery, a year earlier.

"We are very happy that another team has found the same thing," Jean-Claude Chermann said in an interview with SCIENCE NEWS. Chermann and Institut Pasteur colleagues Luc Montagnier, head of the department of virology, and Francoise Barre-Sinoussi have been working exclusively on the problem for well over a year.

Still, Chermann is careful to point out the extent of the trans-Atlantic collaboration in the field and to emphasize the frequent contacts among researchers, both at conferences and in informal visits. And he indicates he is anxious not to jeopardize his working relationship with Gallo, whom he has known for 15 years. Nevertheless, Chermann says he is convinced that HTLV-3 will be proven identical to LAV. "From its effect, and the descriptions of it," he says, "it can only be the same one." Laboratory tests on HTLV-3, a sample of which, for the first time, is to be shipped to Paris this month, should answer the question definitively.

Meanwhile, NCI researchers continue to study LAV samples sent from Paris last September. So far, the studies have been inconclusive.

In their published work until now, the French scientists, wary of overstating their case, have preferred to talk generally of the "role" that LAV may play in the disease. But their most recent articles, still in press, are less tentative. Chermann now considers LAV 95 percent likely to be a cause of the deadly disease first identified in 1981, although, as he points out, "To prove that LAV causes AIDS, one would have to be able to inject the virus into someone and give him the disease."

The search is on for an animal model in which the symptoms of the disease can be reproduced and which could lead to the production of an AIDS vaccine. Work on monkeys at the University of California at Davis by Murray B. Gardner — who recently visited Institut Pasteur — has used a Type-D retrovirus that produces symptoms comparable to those found in the last stages of AIDS in human beings (SN: 1/14/84, p. 21).

U.S. researchers have estimated that an AIDS vaccine could be ready for human testing in two years. But the French, stressing that much work remains to be done, are not as optimistic. "That [optimism] is American rapidity," Chermann says. The virus causing disease in the Davis monkeys is not the same as LAV, he points out, though both are retroviruses. "If we could find an animal candidate [that develops AIDS symptoms when exposed to LAV], we could develop one [a vaccine] in two months," Chermann says. "But so far, there is no means of testing it out."

The French believe they potentially have the recipe for a culture from which the virus could be produced in large quantities for such a purpose. And patents for a diagnostic test to distinguish carriers of the retrovirus were applied for in late 1983 and are still under negotiation with the French government. The Pasteur team, according to Montagnier, received funds of about one million francs ($125,000) for the AIDS project last year.

The team's first major finding was the isolation, in nerve cell groups of a homosexual male with preliminary AIDS symptoms, of a retrovirus that seemed to possess a new set of characteristics. For

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some time, the medical community (the French included), had been on the trail of the HTLV-1 retrovirus that attacked lymphocytes in the bloodstream and was associated with certain forms of leukemia. Chermann himself studied leukemia in animals prior to working on AIDS.

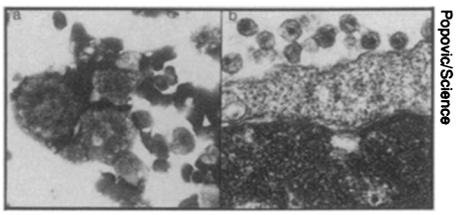
"The idea we started from," he says, "was the conviction that the culprit was HTLV-1." He believes that by adhering to that hypothesis, U.S. researchers were initially sidetracked from isolating the retrovirus that appears to cause AIDS.

The French discovered their new retrovirus in a patient with swollen gland syndrome; they renamed the virus LAV, because they considered it substantially different from the HTLV-1 retrovirus. It kills the cells it attacks, which means that apparently unlike HTLV-1, it cannot trigger uncontrolled proliferation — as in leukemia — of the body's T-cells, a type of white blood cell.

The French team has been able to isolate the same retrovirus in seven of eight patients afflicted with AIDS, in two of 12 patients studied with enlarged lymph nodes — a possible AIDS precursor — and in one otherwise-healthy hemophiliac.

A paper published in the April 7 LANCET details the work with two hemophiliac brothers, one age 17 and relatively healthy, and one age 13 and an AIDS victim. The team's findings — which have been subject to some question by scientists critical of the methods used — were that both brothers had antibodies against LAV. The virus appears to have been transmitted by plasma products. The boys' parents, who were healthy, had no such antibodies.

In recent work on antibodies to the LAV retrovirus, F. Vezinét-Brun and C. Rouzioux, both of Hôpital Claude Bernard in France, indicate that antibodies against LAV could be detected in 74 percent of the patients with enlarged lymph nodes. The antibodies were also present in 37.5 percent of diagnosed AIDS patients (as the disease develops, apparently such antibodies are destroyed) and 17 percent of healthy homosexuals with many sex partners. However, a sample of 130 healthy blood donors showed only one to have these antibodies.



Popovic/Science

*Cells infected by HTLV-3 (a), the U.S. candidate; higher magnification (b) shows released viral particles.*

Together with other recent findings suggesting that the virus replicates only in a subset of "helper T-cells" known as T4 and lowers the ratio of such disease-fighting cells in afflicted persons (a common finding in AIDS victims), French researchers are piecing together what they believe is a scenario of the evolution of AIDS.

This scenario posits a first stage of primary infection by LAV, through blood, sperm and other routes; the viral infection then lies dormant until reactivated by further exposure to LAV and immune system stimuli that activate the T4 lymphocytes; the third stage, lymph node enlargement, leads to the fourth stage, full-fledged AIDS, when the viral infection spreads to all helper cells and leaves the way clear for opportunistic infections of all kinds, including Kaposi's sarcoma, once a rare cancer.

Pending the arrival of the HTLV-3 from NCI, there is room for speculation as to whether the retrovirus LAV will finally retain its identity. "It was a provisional name," says Chermann, "but we chose it on purpose." HTLV-3 suggests the third in a series, a neutral name that links it with the scientists' original hypothesis — a perfectly reasonable point of departure, the French argue, but one that has not solved the conundrum.

While acknowledging the family link between the retroviruses, the French will be reluctant to see their discovery packaged under the HTLV label. "We'll just have to wait for the day when an assembly of learned taxonomists meets to give it its name," says Chermann, suggesting he hopes precedents will be respected. "One loves one's children, you know." □

*News of the week continued from p. 279*

# Guidelines proposed for decisions in care of disabled infants

Pediatricians anxious to keep decisions regarding the treatment of severely handicapped newborns in the hospitals instead of in courts or government agencies have released their own guidelines for decision making. The guidelines, issued last week, are "in the spirit of" compromise regulations put forth by the Reagan administration in January (SN: 1/21/84, p. 47), according to the American Academy of Pediatrics (AAP). But to the surprise and consternation of the physicians, Surgeon General C. Everett Koop, as well as several consumer groups representing the disabled, balked at endorsing the guidelines.

Specifically, the recommendations fleshed out a model of an "Infant Care Review Committee" proposed by the Department of Health and Human Services (HHS) in January. Such committees, composed of nurses, social workers, ethicists and outside community members, as well as physicians, were devised to help parents and physicians resolve the thorny question of when surgery or medical treatment of infants should be seen as a correction of tolerable handicaps, and when such treatment is a mere "prolongation of the dying process" — an issue debated in the two recent "Baby Doe" cases in the United States.

Last November, the National Down's Syndrome Congress and seven other national groups signed a statement of "principles of treatment of disabled individuals," which underscored their conviction that a child's medical condition should be the sole factor in determining treatment. The "limited potential of an individual, and present or future lack of available community resources" should play no role in the decision, they said.

M. Harry Jennison, executive director of AAP, insists that the new guidelines shaped by the organization and several other groups merely extend the earlier principles to produce a working model. But other signers of the "principles" argue that the new guidelines do not go far enough in protecting the rights of handicapped infants. In particular, they fear that the semantic switch in the AAP guidelines that refers to the groups as "infant bioethics committees," instead of simply as care review groups, implies the intrusion of a subjective judgment about the future quality of the infant's life on a decision that they feel should be strictly medical.

Paul A. Marchand, of the Association for Retarded Citizens, expressed concern that unlike the January HHS regulations, the pediatricians' guidelines fail to insist that one member of each infant care review committee serve specifically as a "special advocate for the infant." Jennison argues that the range of expertise of members on such a committee would amply represent the infant's best interests without a separate ombudsman.

Under the academy's guidelines, each committee would have at least 10 members, in contrast to the five recommended in the HHS proposal. In addition to the previously described members, the academy wants to add a second physician, a parent of a disabled child or representative of a disability group, a hospital administrator, a clergyman and a lawyer. The committee would be required to review any decision to forgo treatment, and might be asked by parents or physicians for advice on a decision to continue a particular treatment. The group should recommend a course of action "only when agreement cannot be reached" among the committee, family and health care team. Regardless of the committee's recommendations, "if the family wishes to continue life-sustaining treatment, and the attending physician disagrees, the family's wishes should be carried out," the guidelines stress.

Jennison estimates that only 1 percent of all hospitals nationally have ethics committees to review critical care decisions, and fewer than one hundred have groups that focus on infants. — *D. Franklin*