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.

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 Cerrmann said in an interview with Science News. Cerrmann 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, Cerrmann 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, Cerrmann 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. Cerrmann 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,” Cerrmann 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,” Cerrmann 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
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. Veziné-Brune 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.

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-blown 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."