"A Louse in Virusland"


All quotations (in italics) by Lewis Carroll (Alice in Wonderland, Through the Looking Glass, Hunting of the Snark etc.).

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‘If seven maids with seven mops swept it for half a year, do you suppose,’ the Walrus said, ‘that they could get it clear?’

"Science fictions" is a compilation and an extension of Chicago Tribune science writer John Crewdson’s investigative reporting on Robert Gallo, since this US National Institutes of Health scientist claimed to have discovered that HIV was the cause of AIDS at a US government news conference on April 23, 1984 through almost to the present. He charges that the seminal research papers in the journal *Science* and the first US patents for HIV-related technology are substantially false, and amount to theft of research that was actually performed by French scientists. His charges are backed up by so many details of timing, events and motivations, along with copies of critical documents on an accompanying website, that it is hard to see how Gallo could possibly innocent of these shocking charges.

It is unlikely that anyone else, except perhaps Gallo himself, could provide such a detailed history of early HIV science. Crewdson does a remarkable job of sewing the many threads of this complicated story together, although it can all get confusing at times, because an event that occurred in one year might have ramifications several years later, and the largely chronological flow of the book means that many pages may elapse before the needle emerges with the thread again.

*You may seek it with thimbles - and seek it with care; You may hunt it with forks and hope.*

Before AIDS, Gallo was part of the ‘War on Cancer’, in which billions were spent by the US government (and others) chasing genetic and viral causes of cancer. Gallo was never really successful. Crewdson details how one of his proposed cancer viruses turned out to be mouse virus contamination. Another turned out to be contamination by three different monkey viruses.

The closest Gallo came to proving that a virus was responsible for any type of cancer was with HTLV-I (Human T-Cell Lymphoma Virus 1), which Gallo initially discovered in a lymphoma patient. Gallo was happy to accept cooperation from Japanese scientists when it turned out that antibodies to HTLV-I were common in Japan, along a higher rate of Adult T-Cell Leukemia (not
lymphoma). However, sharing was a one-way street with Gallo. He took from others, but rarely gave in return. More darkly, Crewdson details suspicions that Gallo never really had the virus the Japanese had discovered. Perhaps taking advantage of his reluctance to let his virus leave his lab, he may have taken the samples received from Japanese scientists, and then declared them identical with his virus, giving Gallo credit for a Japanese discovery. Even then he proved reluctant to publicly recognize any contribution by the Japanese in the discovery of the virus he renamed Human T-Cell Leukemia Virus 1. Similar behaviors surfaced in the race to discover a virus that caused AIDS.

Concern over AIDS was growing, and many virologists were searching for a viral cause, although some others felt that the early clusters of disease arose from a common environmental cause (particularly inhalant nitrites known as ‘poppers’). Major medical institutions such as the US CDC, NCI and NIH along with the Institut Pasteur in France, were putting their money on a sexually transmitted virus. Gallo was able to detect signs of HTLV-I in only a minority of AIDS patients. It was true that HTLV-I was found in the immune system’s T-cells that were depleted in AIDS, but many wondered why a virus that caused uncontrolled replication (cancer) in some would cause cell death (immune deficiency) in others. Even renaming it Human T-Cell Lymphotropic Virus 1 was not enough to convince most people.

It’s very rude of him...to come and spoil the fun!

Meanwhile, a group of French scientists led by Luc Montagnier at the Institut Pasteur in Paris were having more success with what they called LAV (Lymphadenopathy Associated Virus). They had found a much higher level of antibodies in AIDS patients than Gallo ever found with HTLV-I and were rapidly moving towards the development of a blood test. While a virus could not be patented, a blood test could bring patent royalties and prestige.

Beware the Jabberwock, my son!

Montagnier tried many times to cooperate with Gallo. In September 1983 he shipped them samples of LAV. The receipt, signed by Gallo’s assistant Mikulas Popovic, agreed not to the material for commercial purposes. That did not seem to matter at the time, because Gallo claimed to be unable to grow LAV and still claimed months later that HTLV-I was the cause of AIDS. Later, it became a critical piece of evidence in the dispute over the US blood test patent (a distinctly commercial application) when it emerged that Gallo’s virus was identical to LAV.

What Gallo did not tell anyone was that Popovic was growing LAV (renamed MOV) and had concluded that it, not HTLV-I was the cause of AIDS. Eventually, Gallo concluded that Montagnier had been right, but rather than admit it, he claimed that HTLV-III (previously MOV) was the cause of AIDS and that he had known this for a long time, even during the time he had been publicly promoting HTLV-I!

Curiouser and curiouser!

Once Gallo realized that Montagnier was going to win the race, he used his incredible gall and considerable influence to rewrite history. The proceedings of
the 1983 Cold Spring Harbor conference were published with Gallo’s HTLV-I talk removed, and a paper on HTLV-III (Gallo’s new name for MOV/LAV) substituted. The original text for the Lasker prize, awarded jointly to Montagnier, Gallo and another retrovirologist, Max Essex, was mysteriously changed to downplay Montagnier’s contribution and inflate Gallo’s. A review of a National Cancer Institute symposium written for Cancer Research by a mentor of Gallo substituted a gene map of HTLV-III which had not been presented, and omitted a gene map from the Institut Pasteur that had been.

Gallo’s influence, the weight of US government funded medical research institutions and his frequent caustic remarks about competing scientists, helped him in the race to be the first to be published and to be the first to obtain a US patent on a blood test. Several of Montagnier’s papers were turned down by major journals, whereas Gallo had editors bending over backwards for his. One editor of Science even invited people from Gallo’s lab to her house to work on a paper over a weekend. Crewdson details many examples of Gallo verbally savaging scientists or journalists who had criticized him, and he describes how some scientists found their careers slipping after crossing him.

The race to discover the cause of AIDS had become political. American medicine wanted to be the ones to discover the cause of a uniquely American disease. The American journal Science did its part by publishing Gallo in preference to Montagnier. Margaret Heckler, Secretary of Health and Human Services, at the April 23, 1984 news conference stopped reading her prepared speech before acknowledging the work of the Institut Pasteur. The US patent office fumbled the Pasteur patent application for an HIV blood test, while awarding the later Gallo application in record time.

Tweedledum and Tweedledee agreed to have a battle; for Tweedledum said Tweedledee had spoiled his nice new rattle.

The awarding of a US patent to Gallo turned into a legal battle between France and America. France clearly had better documentation, however, the American government lawyers, believing what Gallo was telling them, would not admit any wrong-doing. The French were perhaps intimidated because most of the press and many scientists supported Gallo. The French eventually agreed to a settlement before the case went to court, awarding them partial ownership of the blood test patents, much to the disappointment of some who felt that if the case had gone to court they would almost certainly have won. This accord, signed by Presidents Reagan and Chirac in March 1987 was accompanied by an official history, largely drafted by Robert Gallo.

What I tell you three times is true.

As more and more embarrassing revelations emerged, many of which were first reported by John Crewdson in the Chicago Tribune, Gallo was eventually forced to back down on many of his claims. He had to admit that his lab had been able to culture LAV. 48 of his own isolates of HTLV-III that he had claimed to have developed never materialized. Popovic admitted that he had used a pool of fluids from 10 patients to provide critical information for one of the first Science papers, a procedure that made it impossible to tell which patient had provided the active material. It is likely that LAV was slipped in at this point. Gallo had to
agree that 'his' virus, HTLV-III, was genetically virtually identical to LAV, far closer than any others, meaning that it had almost certainly come from the same person.

Gallo had rare moments of generosity. One of these occurred when he sent another assistant, M. G. Sarngadharan, to Paris with samples of HTLV-III. Little did Montagnier know that this was a trojan horse -- later Gallo claimed that HTLV-III had contaminated all the French materials, and that LAV was nothing more than a result of this contamination. Unluckily for Gallo, however, the timing was too well documented for this to be believable.

Sloppiness was another characteristic of the Gallo lab. While the Institut Pasteur could provide detailed notes on their experiments in bound laboratory notebooks, Gallo’s lab could only provide loose sheets of paper with dates often out of sequence. Worse yet, some of them showed evidence of tampering. This became obvious when two different copies of the same memo surfaced, one of which had been doctored by someone in Gallo’s lab to replace the incriminating name LAV by MOV.

‘I’ll be judge, I’ll be jury,’ said cunning old Fury: ‘I’ll try the whole cause, and condemn you to death.’

A series of investigations followed. In 1990 a National Academy of Science panel recommended that the Office of Scientific Integrity initiate a formal misconduct hearing. Early in 1992 they found Popovic guilty of scientific misconduct and censured Gallo. Later that year, the NIH Office of Research Integrity found Gallo guilty of scientific misconduct, but not Popovic. This finding was withdrawn when an adjudication panel insisted that proof of deception was not enough, there had to be proof of intent to deceive, a standard that the investigators concluded was impossible to meet.

And thick and fast they came at last, and more, and more, and more.

But, Gallo’s troubles were not over. John Dingell, powerful chairman of the US Congress Energy and Commerce committee started an investigation. This resulted in a damning staff report (available at http://www.healtoronto.com/galloindex.html) that was provided to Dingell just before he was removed from his position by the Republican takeover of the US Congress in November 1994. The Republicans terminated all Dingell’s committee work, and Gallo was saved.

[The Cheshire Cat] vanished quite slowly, beginning with the end of the tail, and ending with the grin.

Well, almost saved. Perhaps seeing the writing on the wall, Gallo retired from the US Public Health Service, moving to a newly created institute in Baltimore funded by the State of Maryland. While there he has made many announcements, but no substantial advances in drugs or vaccines for AIDS or fundamental understandings of HIV. But then, 20 years into the era of HIV and AIDS, he is hardly alone.
'And hast thou slain the Jabberwork? Come to my arms, my beamish boy!'

In a crime novel the villain almost always ends up in jail or killed. But, in Crewdson’s story, Gallo is simply fading away. He has not yet been punished for any of his probable wrongdoings. Worse yet, nothing has really changed in the institutions that allowed this fraud to happen, and it could all happen again. In fact, Crewdson briefly mentions some other cases where fraud appears to have occurred, but the institutional barriers against findings of scientific misconduct were too great to act against powerful scientists. In the case of AIDS the stakes are extremely high, and debunking the first major publications would only bolster the claims of the persistent few who claim that the infectious theory was elevated from ‘theory’ to ‘fact’ far too quickly.

It is somewhat surprising that for all Crewdson’s skepticism about Gallo’s work, he is quite dogmatic about accepting HIV as the cause of AIDS, particularly given that 20 years later we seem to be no closer to a cure. This belief leads Crewdson to propagate a number of errors. He claims that the enzyme Reverse Transcriptase is the hallmark of a retrovirus, even though it is known to be found in uninfected cells. He is quite happy to accept antibodies as evidence for an active infection, even though antibodies persist after an infection is cleared. He criticizes the Gallo ELISA (HIV antibody test) for flagging as negative many samples that have indeterminate Western Blot tests (another, more complex antibody test). Yet, indeterminate Western Blot tests are generally treated as negative. He also claims that the time between HIV infection and AIDS is normally only a few months when, in fact, research has been remarkably consistent in showing an average of 10 years between HIV infection and the first sign of AIDS. He does not even mention that Gallo himself agreed in 1994 that one of the first two AIDS diseases, Kaposi’s Sarcoma, is not caused by HIV.

‘Begin at the beginning,’ the King said gravely, ‘and go on till you come to the end; then stop.’

The timing of events, which is so critical in this story, is hard to follow even though the text is chronological. Crewdson includes dates in the text only sparingly, and often refers to a month without its year, making it necessary to search back and forth several pages to find a full date as a reference point. The chronology near the front of the book is helpful, but incomplete. The book also makes use of two series of notes. Those with letters are detailed in the back of the book (which I detest, because readers have to remember what chapter number they are in at all times to find the right note) and those with numbers are at www.sciencefictions.net. Quite shrewdly, Crewdson has arranged his website so that without the book in hand, it is virtually impossible to use.

Crewdson’s book must be read by anyone with an interest in HIV, AIDS, scientific integrity, the interactions of science and politics or students of manufacturer histories. The more you find this story unbelievable, the more important it is to read this book.

Everything’s got a moral, if only you can find it.