

"Startling. . . Certain to spark controversy, this provides quite a different view of virus mutations and evolution." —*THE BOOKWATCH*, MIDWEST BOOK REVIEW

Emerging Viruses

AIDS & Ebola
Nature, Accident or Intentional?



Leonard G. Horowitz, D.M.D., M.A., M.P.H.

Foreword by W. John Martin, M.D., Ph.D.

EMERGING VIRUSES: AIDS & EBOLA

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Foreward by W. John Martin, M.D., Ph.D.

"To do evil a human being must first of all believe that what he's doing is good . . .

Ideology - that is what gives devildoing its long-sought justification and gives the evildoer the necessary steadfastness and determination. That is the social theory Which helps to make his acts seem good instead of bad in his own and others' eyes, so that he won't hear reproaches and curses but will receive praise and honors."

-Russian dissident Alexander Solzhenitsyn

DEDICATED TO THE SEEKERS OF TRUTH

and to those who, regardless of risk, labor tirelessly to tell it.

To the Reader

THIS BOOK is painfully nonfiction - the story is true, the characters, scientific and political, are real. Secondary references have been checked and authenticated.

Since the importance of this information was clear, I labored to write for both critical health scientists and intelligent lay readers without losing either. Technical words are explained in lay terms for all to better understand.

Though many people - black, white, gay, straight, Jew and gentile - may wish to deny the implications of this work, the truth is the truth. As British statesman Edmund Burke said in the wake of the American revolution, "People never give up their liberties but under some delusion." Perhaps now, as AIDS consumes the lives, liberties, and pursuits of an estimated 30 million HIV-positive people worldwide, the time has come to vanquish our delusions about it and its origin.

Despite its social and scientific importance, the origin of HIV has been clouded in mystery. Based on the mass of circumstantial and scientific evidence presented herein, the theory that "emerging viruses" like HIV and Ebola spontaneously evolved and naturally jumped species from monkey to man must be seriously questioned.

There is an old saying in medicine, that diagnosis is required before treatment. The facts presented here, easily verified, may help diagnose the man-made origin of the world's most feared and deadly viruses. It is hoped this work will, therefore, help redirect AIDS science in search of a cure, free AIDS victims from the guilt and stigma attached to the disease, as well as prevent such "emerging viruses" from reemerging. I offer this investigation into the origin of AIDS and Ebola for critical review in the hope that it may also contribute to greater honesty in science, to political, military, and intelligence community reforms that are truly peace loving, and to self and social reflection as a preventative against inhumanity.

-LEONARD G. HOROWITZ

Foreword

All at once, it seems, new viruses and virus-related diseases have threatened the health of humans and many animal species. How did this situation arise? Could it be that scientific studies and the emergence of new pathogens are not totally unrelated events? In writing this text, Dr. Horowitz has bravely questioned the extent to which scientific research and lax government oversight may have contributed to the present and coming plagues. Open debate on this issue has been soundly discouraged. Opponents to open dialogue on the apparent relationship between early viral research and the latest germ discoveries argue that little good, and considerable harm, would come from a full disclosure of the facts. Exposing the truth, many believed, would likely: 1) tarnish the reputations of certain scientists, 2) make it more difficult to maintain science funding, 3) promote antigovernment sentiment, and 4) likely leave many issues unresolved. Others argued that it was simply too late to undo past mistakes. The fact that a better understanding of the new viruses' origins could lead to new treatment approaches, and, more importantly, to ways of preventing future outbreaks, was disregarded.

In considering the recent genesis of HIV and the Ebola viruses, Dr. Horowitz's book has explored three areas of great general and scientific interest: 1) the history of intensive research into the viral causes of cancer wherein readers can become familiar with the many, now questionable, virus transmission experiments, 2) the CIA and Department of Defense efforts to develop and defend against biological weapons of germ warfare. Here Dr. Horowitz should be especially congratulated for presenting well-researched little known facts that, though highly disturbing, are an important piece of history that may also bear heavily on the emergence of new viruses, and 3) vaccine production. Clearly, as anyone who reads this book will conclude, there is a great need for more open dialogue concerning the past and present risks

inherent in the production of live viral vaccines. It is this topic that I am pleased to address here.

In 1798, Edward Jenner, an English physician advanced the use of cowpox (vaccinia) virus for immunizing humans against smallpox. He recognized that pathogens can behave differently while infecting different species. Indeed, he theorized that the vaccinia infection, which caused mild problems for cows, caused more severe ailments in horses. Only after adapting to cows, did vaccinia acquire limited infectivity for humans. The open sores that humans developed were far less severe than those induced by smallpox (variola) virus and essentially remained localized to the site of inoculation. Moreover, contact with vaccinia virus caused individuals to become virtually immune to the widespread disease caused by the small-pox virus. The success of vaccination is reflected in today's total elimination of smallpox as a disease. Jenner's vaccination approach was followed in the twentieth century by Pasteur's use of rabies virus grown in rabbit's brain, and by Theiler's finding that he could reduce the effect of yellow fever virus by growing it in chicken embryos.

These successes set the precedent for other scientists to attempt to reduce the pathogenicity of other human and animal viruses by inoculating them into foreign species. Although we now look back with some disdain at the crudeness of early immunization experiments - such as the 1938 injections of polio virus, grown in mouse brains, into humans, most people, including scientists, are unaware that we still use primary monkey kidney cells to produce live polio virus vaccine. Likewise, dog and duck kidney cells were used to make licensed rubella vaccines. Experimental vaccines, grown in animal tissues and intended for human use, were commonly tested in African monkeys, and it is likely that many of these monkeys were released back into the wild. This practice may have led to the emergence of primate diseases, some of which could have been transmitted back to humans.

Large numbers of rural Africans were also chosen as test recipients of experimental human vaccines.

In veterinary medicine, live viral vaccines have been widely used in domestic pets and in animals destined to become part of the food-chain. Undoubtedly, many cross-species transfer of viruses have occurred in the process. Even today, more than ten foreign species are used to produce currently licensed vaccines for cats and dogs.

The general acceptance of the safety of cross-species produced vaccines was supported in part by the generalization that there are inherent restrictions to the interspecies spread of disease. Thus, like vaccinia, most viruses are less harmful, but others can be far more dangerous after invading a foreign host. One dramatic example is that of the human infection caused by the herpes-type monkey B virus. This germ remains a rather harmless invader of monkeys, but place it in humans, and striking, severe, acute illness results which commonly ends in death. Likewise, a modified horse-measles-virus (morbillivirus)

can be lethal to man. Other examples include the relatively mild dog distemper morbillivirus that was blamed for the death of some 3,000 lions in the Serengeti; the cat-adapted parvovirus that caused worldwide infection in dogs; and the mouse-derived lymphocytic choriomeningitis virus that caused severe hepatitis in monkeys.

It is the slow onset of disease that can be particularly baffling, especially when considering potential viral diseases transmitted through vaccines. Most acute diseases are relatively easy to recognize and amenable to further prevention. The delayed onset of chronic debilitating diseases that could be associated with animal viruses finding their way into a new species, e.g., man, are much more challenging. Here, the association between the germ and the symptoms it causes is obscured. Such an association would be especially hard to establish if the clinical features presented during the illness are poorly defined and mimic those of other known ailments. One example is the 1996 concern over the food-borne transmission of the prion disease scrapie. Initially carried by infected sheep, this protein caused bovine spongiform encephalopathy in "mad" cows. Then it was apparently passed on to humans resulting in juvenile Crutzfeldt-Jakob disease.

While in some cases disease transmission has been traced to certain vaccine lots, other times, even widely distributed licensed vaccines have been found to be contaminated. Yellow fever vaccine was known to contain avian leukosis virus. (* Editor's note: This is the retrovirus that causes leukemia in chickens.) During World War II, batches of yellow fever vaccines were inadvertently also contaminated with hepatitis B virus. Current measles, mumps, rubella (MMR) vaccines contain low levels of reverse transcriptase, an enzyme associated with retroviruses. Both Salk and Sabin polio vaccines made from rhesus monkeys contained live monkey viruses called SV40, short for the fortieth monkey virus discovered. As Dr. Horowitz documents, polio vaccines may also have contained numerous other monkey viruses, some of which may have provided some building blocks for the emergence of HIV-1 and human AIDS.

The finding of SV40 in rhesus monkey kidney cells, during the early 1960s, led to a rapid switch to African green monkeys for polio vaccine production. Kidney cells from African green monkeys, still being used to produce live polio vaccines today, may have been infected with monkey viruses that were not easily detectable. The monkeys used before 1980, for example, were likely to have been infected with simian immunodeficiency virus (SIV)-a virus genetically related to HIV-1. The origin of this virus and whether it contaminated any experimental vaccines are issues that need addressing.

What makes vaccines so troublesome is that their production and administration allows viral contamination to breach the two natural barriers that often restrict cross-species infections: First is the skin. Direct inoculation of vaccines breaches this

natural barrier and has been shown to produce increased infections in animals and humans. Such was the case when SV 40 was injected intramuscularly in contaminated Salk polio vaccine. Later it was learned that Sabin's orally administered polio vaccines were safer since the live simian viruses were digested in the stomach and thereby inactivated. Additionally risky, when it comes to breaking the skin barrier, is the chance of transmitting viruses from one person to another through the use of unsterilized needles.

Second is the unique and natural viral surface characteristics that reduce the chance that viruses might jump species. The mixing of vaccine viruses with others found in the cells and tissues used to develop the vaccine can potentially lead to the development of new recombinant mutants that are more adaptive and have wider host range than either of the original viruses. This can especially happen when a live viral vaccine produced in cells from one species is then given to another species.

Also of concern is the transmission of new genetic information along with the vaccine virus. For instance, early adenoviral vaccines, produced in rhesus monkeys' kidney cells, developed to protect people against respiratory infections, incorporated parts of the SV40 virus that remained as a vaccine contaminant even after production of the vaccine virus was switched to human cells. Numerous other vaccines, especially those that were used in early field trials in Africa, should be analyzed for those genetic components which characterize today's monkey and human pathogens.

Unfortunately, this new awareness of potential problems with live viral vaccines has had little impact on the viral vaccine approval process. Seemingly, U.S. government agencies, principally the FDA, have been reluctant to impose additional testing requirements on vaccines once they are approved for use. In effect, government officials are given a single opportunity to decide on a new vaccine's safety. Even then, government regulators themselves may be denied certain critical information belonging to the vaccine industry. Specifically, FDA regulations are written so as not to compel industry to reveal testing information not directly pertaining to the lots submitted for clinical use. The FDA is reluctant to admit its lack of knowledge about vaccines to the medical/scientific community. Yet, practicing physicians are expected to unquestionably endorse the safety of vaccines under all circumstances and to all individuals. Aside from these bureaucratic barriers to viral vaccine safety assurance, there are additional major concerns. Since vaccine development information is considered proprietary - protected by nondisclosure policies - government officials and researchers must shield potential safety issues from public scrutiny. This censorship is rationalized by the all too persuasive argument that vaccines cannot be criticized lest the public become non-compliant in taking them. Finally, this silence is buttressed by the small number of people capable of critically evaluating vaccine

manufacturing and safety testing procedures. In essence, health care professionals and the general public know little about the possible dangers of live viral vaccines.

As an illustration, the issue of possible simian cytomegalovirus (SCMV) contamination of live polio virus vaccines has been suppressed since 1972. On the eve of Nixon's war on cancer, a joint Lederle Corporation/FDA Bureau of Biologics study showed that eleven test monkeys, imported for polio vaccine production, tested positively for SCMV. The reluctance of the FDA to act on this matter was revealed in a corporate memo delivered the following year. Even in 1995, following a report to FDA officials concerning a patient infected with a SCMV-derived virus, no new in-house testing of polio vaccines for SCMV has occurred. Moreover, this author's specific requests for vaccine material to undertake specific testing, were denied on the basis of protecting "proprietary" interests.

This basic flaw in the regulatory process must be addressed - the FDA must be responsive to the medical-scientific community's need for accurate information regarding the potential hazards of products released for use in society. In the event that public health and safety concerns arise, industry should wave its right to maintain proprietary intelligence. This would enable the FDA to disclose more information concerning the safety of FDA regulated products to the medical-scientific community. Such a proposal should be included in the all pending and future FDA reforms.

It is against this background of possible risks of past vaccine studies, uncertain biological recombinants, bureaucratic censorship, a rising tide of medical consumerism in the information age, and an urgent need for legislative FDA reform, that Dr. Horowitz's work contributes. At mini-

mum, what you are about to read exposes many important facts which, unfortunately, few people realize and all would be better off knowing. At best, this important text raises far greater hope that by knowing their origin, cures for the many complex emerging viruses, including AIDS, may be forthcoming.

-W. JOHN MARnN, M.D., Ph.D.*

* Dr. W. John Martin, a Professor of Pathology at the University of Southern California, is also the Director of the Center for Complex Infectious Diseases in Rosemead, California. Between 1976 and 1980, Dr. Martin served as the director of the Viral Oncology Branch of the FDA's Bureau of Biologics (now the Center for Biologics, Evaluation and Research), the government's principal agency in charge of human vaccines.

Prologue

"DAVID was an alcoholic, an active alcoholic," recalled Edward Parsons. "I say that -I have nothing to hide. I'm also a recovering alcoholic. When I met David, I spoke to him about sobriety and the possibility of becoming involved with AA, and I don't think that was at the time really an option for him." [1]

Robert Montgomery, the attorney for four of the six Florida dental AIDS victims, listened intently as the auburn-haired nurse and once closest homosexual friend of the infamous Dr. David Acer spoke under oath for the record.

"He would drink - start to drink and not be able to stop and become inebriated, sloppy, more aggressive, more assertive. He would come on to people a lot more easily."

"And you believe he may have intentionally infected his [dental] patients?" Montgomery questioned.

"Yes. What happened was David was angry. He was very angry. I guess he had a right to be. Kimberly Bergalis was very angry, so was the family. That's a natural reaction to a diagnosis like that [AIDS]. But I had a conversation with David that bothered me. It has bothered me for quite a while. Now, when ultimately these five patients came forward I was certainly surprised at that disclosure, and then heard that they were testing positive for the same strain of virus that David had apparently possessed. This is all based on media. This was not based on any conversation I had with him. But I was able to recall a conversation I had with him that bothered me."

Parsons paused to take a drink.

"Go on," prodded the counselor.

"He had been drinking," Parsons continued. "He - we discussed AIDS again. I think I mentioned a friend of mine had been diagnosed and he discussed with me - he verbalized some opinions and some feelings, and he said something to the effect that, well, our society does not want to address the issue because they perceive it to be a homosexual problem, and when it begins to affect younger people and grandparents, I think is the words he used, he said that maybe society will do something. I kind of just blew it away. I didn't think much of it.

"I asked him how his practice was going. He said fine, and that was the end of that conversation. I met with him again up at his home. . . , and we discussed it again. There was sort of an anger there about HIV and what our government was. We got into many, many political discussions where HIV came from, the World Health Organization theory and all of these various conversations about it. . . . The perception within the gay community was that our government avoided the issue; neglected the issue. We discussed everything from the controversy surrounding Robert Gallo and the French researcher Luc Montagnier at the Pasteur Institute; Ronald Reagan. Just numerous conversations pertaining to AIDS."

"And this began in 1985?" Montgomery questioned.

"1985, that's correct."

"What did he say about Montagnier and Gallo?"

Parsons replied, "David believed that HIV was probably, if not created in a lab, he believed that HIV was introduced into the human population and various governments knowingly sat on this information for a period of years before they actually acknowledged [it]. . . ."

Montgomery looked puzzled. "Are you saying that you interpreted that . . . to mean that you felt Dr. Acer was potentially deliberately infecting his patients?"

"I think so," Parsons replied. "We had - as I said, we had numerous conversations about AIDS and politics and transmission. . . . He believed that there were solutions out there; that there were drugs and chemicals out there that could kill the virus and that there was a conspiracy. . . . Some sort of a conspiracy. . . ."

"What he said was when HIV begins to affect mainstream - I think the word he used was mainstream America, when we start seeing people who are - I think the word he used was adolescents and grandparents, then maybe something will be done. . . ." [1]

The preceding legal testimony provided by Edward Parsons was passed on to authorities from the United States Centers of Disease Control and Prevention (CDC) and the Florida Department of Health and Rehabilitative Services (HRS). Investigators for these agencies then also interviewed Parsons. According to the U.S. General Accounting Office, HRS officials then delivered the incriminating testimony to the Florida attorney general's office. Both offices then failed to pursue a criminal investigation into the case "noting the absence of supporting evidence." [2]

Officially thwarted in his effort to relay his circumstantial evidence to the world, on October 1, 1993, Parsons's broadcast his claims with the help of Barbara Walters on ABC television's "20/20." [3] The authorities thereafter announced that Parsons's testimony was unreliable.

Dr. Robert Runnells, an expert witness hired by attorney Montgomery to argue Acer's negligence in infection control in the now famous Kimberly Bergalis case, openly discredited Edward Parsons in his book 'AIDS in the Dental Office.' [1] Runnells wrote that Acer's close friend:

"consciously or subconsciously, may have begun championing the theory of Acer murdering his patients to keep the case before the public - to continue to emphasize to mainstream America that anyone can get AIDS - whether or not they are gay. In fact, it was [Parsons] who wanted desperately to carry the anti-homophobia message. Because Acer and Kimberly were constantly in the headlines, [Parsons] may have decided that the media would continue to carry a story that Acer may have intentionally injected his patients." [1]

Contrary to Dr. Runnells's and attorney Montgomery's claims, the

mass of circumstantial and scientific evidence presented in my earlier book 'Deadly Innocence: Solving the Greatest Murder Mystery in the History of American Medicine' [4] showed the most plausible way Dr. David Acer could have infected six patients with the AIDS virus between December, 1987 and July, 1989 was by intent, just as Edward Parsons alleged.

'Deadly Innocence,' along with three investigation reports I subsequently published in the scientific/health professional journals 'AIDS Patient Care,' [6] 'Clinical Pediatric Dentistry,' [7] and the 'British Dental Journal,' [8] provided evidence that Dr. Acer was developmentally and behaviorally predisposed to become an organized serial killer. By reviewing Federal Bureau of Investigation (FBI) methods and materials, I learned that all serial killers kill for the sake of power, control, and revenge. The most important question in the Deadly Innocence investigation then became, "Against whom did Acer hold a vendetta?"

In light of Parsons's legal testimony and other evidence, it became evident that the dentist's primary vendetta was against the United States Public Health Service (USPHS) and the CDC whom he believed developed and intentionally deployed the AIDS virus. Indeed, he held the authorities accountable for his infection and the deaths of scores of others.

During a personal conversation with Parsons, he admitted to me that Acer was outraged by the notion that the American homosexual community had been specifically targeted to receive HIV-tainted hepatitis B vaccinations during the 1970s.

Though this theory, I later learned, was embraced by at least a half dozen health scientists and scholars throughout the world, in the United States, the "World Health Organization theory," as it is called, was principally advanced by Dr. Robert Strecker, a practicing internist and gastroenterologist with an additional doctorate in pharmacology. As a trained pathologist and insurance industry consultant, Dr. Strecker initially investigated the AIDS epidemic and virus under contract with a large insurance

company. Following years of research, Strecker published a highly controversial videotape entitled 'The Strecker Memorandum.' [9]

According to Edward Parsons, "David and I viewed The Strecker Memorandum at length and spent hours in heated discussion over its disturbing contents." [10] In The Memorandum, Strecker alleged that the AIDS virus was "requested," "created," and "deployed" and its effects were predicted long before the epidemic began. In short, Acer believed that he was one of millions of innocent victims of genocide.

The speculation that Dr. Acer was angry with "mainstream" America for not recognizing AIDS as everyone's problem was only part of the story that the authorities and media promoted. The fact is many people are similarly angry, yet they do not go

around killing people. The explanation fell short of a plausible murder motive.

Acknowledging the possibility that Acer, a closet homosexual who never came to terms with being gay, may have held a vendetta against mainstream homophobes, I realized Acer's second plausible motive. As an intelligent, scientifically trained, solo practitioner, the terminally ill dentist would have realized he could never spread his virus throughout the entire U.S. population. What he could do, however, and what the evidence showed he intentionally accomplished, was to spread the fear of AIDS in health care throughout mainstream America. In fact, the open letter Dr. Acer published, shortly before his death, spelled out his two principal vendettas against American public health authorities and mainstream homophobic society. Within eight brief paragraphs, published in Florida newspapers on September 6 and 7, 1990, Acer condemned the CDC six times for their alleged involvement in the viral transmissions and articulated his grave distrust of them. He ended by subtly expressing his fascination with the probability of initiating mass hysteria throughout the United States:

"It is important to be informed of this disease, so you are aware of the dangers and how it can and cannot be transmitted. As fear of the unknown is hard to deal with, but knowledge of what you fear can at least help you know what action to take, if any. . . ." [5]

Following months of intensive investigation, HRS and CDC researchers failed to report Parsons's testimony, or give serious consideration to the murder theory. Rather, they speculated that this first and only documented cluster of doctor-to-patient HIV transmission cases was most likely "an accident." They published that injuries sustained by a fatigued and shaky Dr. Acer, who performed "invasive" procedures on his patients, were the most likely cause of the infections and not negligence (that is, the use of un-sterilized instruments and equipment). In addition, after having the Florida Attorney General's Office review the facts, they rejected the "murder theory."

Later, following years of denial, the Barbara Walters interview of Edward Parsons, and the identification of Acer's sixth victim, Sherry Johnson, who received no invasive procedures aside from local anesthetic injections, the CDC exhumed the murder theory for plausible consideration. Dr. Harold Jaffe, Deputy Director for HIV/AIDS Science at the CDC, quickly concluded the case would likely remain "an unsolvable mystery." [11]

Adding to the confusion, in early June 1994, a CBS "60-MINUTES" report proposed that the victims themselves were to blame. The program accused Kimberly Bergalis, the elderly Barbara Webb, and the others of concealing sexual practices and other lifestyle risks, and said their infections came from random community exposures. Though this disinformation was quickly and easily debunked by official as well as independent

investigators, for a grossly uninformed public, the cruel CBS hoax had left its mark. [12]

The Florida dental AIDS tragedy generated intense controversy, mass hysteria, needless concerns, political legislation, billions in financial costs, and even increased death and disease among those frightened away from health care. In light of the importance of the case, its toll on society, and the many questions it raised, I believed, prior to writing this book, that a final chapter in the case needed to be written. In a strange and unsettling way, this book at least shows that Acer's anger, though obviously not his actions, was justified. The mystery of his case, for many now, may be solved. More-over, Acer may have fulfilled a remarkable destiny - creating one mystery to help solve a larger one - the origin of AIDS, Ebola and other "emerging viruses."

Abbreviations

ABC-Atomic Energy Commission
ABIPP-American Enterprise Institute for Public Policy
AIBS-American Institute of Biological Sciences
AIDS-Acquired immune deficiency syndrome
AIFLD-American Institute for Free Labor Development
AMI-Allan Memorial Institute
AMV -avian myeloblastosis virus
ARC-AIDS related complex
ARV -AIDS associated retrovirus
ASCC-American Society for the Control of Cancer
BSL-biological safety level (1-4)
BW-biological weapons
BPL-Boston Pubic Library
BPP-Black Panther Party
BLV-bovine leukemia virus
BL-Burkitt's lymphoma
BVV-bovine visna virus
CAfB-Covert Action Information Bulletin
CBW-chemical and biological warfare
CDC-Centers for Disease Control and Prevention
CFR-Council on Foreign Relations
CHINA-chronic infectious neuropathic agents
CIA-Central Intelligence Agency
CIC-Counter-Intelligence Corps
CNSS-Center for National Security Studies
COINTELPRO-Communist (Counter) Intelligence Program
CPUSA-Communist Party U.S.A.
CSH-Cold Spring Harbor
DCI-Director of Central Intelligence
DREW-Department of Health, Education and Welfare
DNA-Deoxyribonucleic Acid
DOD-Department of Defense
DT-diphtheria, tetanus

EBV-Epstein Barr Virus
ECT-electro-convulsive (shock) therapy
ELISA (test)--enzyme-linked immuosorbent assay
ERTS-Earth Resources Technology Satellite
FBI-Federal Bureau of Investigation
FELV-feline (cat) leukemia virus
FCRC-Frederick Cancer Research Center
FDA-Food and Drug Administration
FNLA-N ational Front for the Liberation of Angola
FOIA-Freedom of Information Act
FSA-Federal Security Agency
GAO-U.S. General Accounting Office
GRID-Gay related immune deficiency
HAV-human AIDS-related virus
HBsAg-hepatitis B surface antigen
HBV-hepatitis B virus
HELA-Henrietta Lack (cell line)
HIV-human immunodeficiency virus
HRS-Florida Department of Health and Rehabilitative Services
HSPH-Harvard School of Public Health
HTLV-human T-lymphocyte leukemia virus
IADB-Inter-American Defense Board
IARC-International Agency for Research on Cancer
IDA-International Development Association
ILC-idiopathic lymphocyteopaenia
INTELSAT ~intelligence satellite
IPP-Institute Pasteur Production
JIC-Joint Intelligence Committee
JIOA-Joint Intelligence Objectives Agency
LAV-lymphadenopathy-associated virus
LBI-Litton Bionetics, Inc.
LSAF-Louisiana State Agriculture Farm
MIT-Massachusetts Institute of Technology
MKNAOMI-CIA code for secret biological weapons program
MKULTRA-CIA code for secret mind control program
MLV-mouse.leukemia viruses
MMIC-military-medical-industrial complex
MMMV-maximally monstrous malignant virus
MPLA-Popular Movement for the Liberation of Angola
MSD-Merck, Sharp & Dohme
NAACP-National Assoc. for the Advancement of Colored People
NAS-National Academy of Sciences
NASA-National Aeronautics and Space Administration
NATO-North Atlantic Treaty Organization
NBC-New Bolton Center
NBRL-Navy's Biomedical Research Laboratory
NCAC-National Cancer Advisory Council
NCDC-National Communicable Disease Center
NCI-National Cancer Institute
NFF-Nicaraguan Freedom Fund
NGO-Nongovernmental Organization

NIAID-National Institute for Allergies and Infectious Diseases
NIH-National Institutes of Health
NRC-National Research Council
NSC-National Security Council
NSF-National Science Foundation
NYCBB-New York City Blood Bank
NYCBC-New York City Blood Center
NYUMC-New York University Medical Center
OPC-Office of Policy Coordination
OSRD-Office of Scientific Research and Development
OSS-Office of Strategic Services
OTRAG-Orbital Transport and Missiles, Ltd.
PAHO-Pan American Health Organization
PUSH-People to Save Humanity
RAPID-Resources for the Awareness of Population and
International Development
RNA-Ribonucleic Acid
SCF-Save the Children Fund
SCMV-simian cytomegalovirus
SFV-simian foamy virus .
SMOM-Sovereign Military Order of Malta
SOD-Special Operations Division of the Army
SVCP-Special Virus Cancer Program
SVLP-Special Virus Leukemia Program
SV(40)-simian virus (40)
TEREC-Tactical Electronic Reconnaissance
UNDP-U.N. Development Program
UNFAO-U.N. Food and Agriculture Organization
UNFPA-U.N. Fund for Population Activities
UNICEF-U.N. Children's Fund
UNIT A-National Union for the Complete Independence of
Angola
USAID-U .S. Agency for International Development
USIA-U.S. Information Agency
USPHS-U .S. Public Health Service
USDHEW-U.S. Dept. of Health, Education and Welfare
VEE-Venezuelan equine encephalitis
VVE-Venezuelan equine encephalomyelitis
VFHP-Voluntary Fund for Health Promotion
WRS-War Research Service
WBC-white blood cells
WHO-World Health Organization
WPPA-World Population Plan of Action

-NOTES-

[1] Runnells RR. AIDS in the Dental Office. The Story of Kimberly Bergalis and David Acer. Fruit Heights, Utah: IC Publications, Inc., 1993, pp. 293-298; Johnson vs. Acer (Legal suit brought against dentist David Acer by Sherry Johnson).

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- [12] CBS News-a 60-MINUTES report. Kimberly's story. Produced by Josh Howard. June 19, 1994.

Part I
Introduction and Scientific Background

Chapter 1
The "World Health Organization
Theory of AIDS"

The World Health Organization (WHO) theory [1] festered in my mind like a disease. That the AIDS virus was cultured as a biological weapon and then deliberately deployed was unfathomable. How could WHO scientists and others in the United States Public Health Service (USPHS) consciously or even unwittingly create such a hideous germ? More inconceivable was the alleged targeting of American homosexuals and black Africans for genocide. The entire subject was beyond my wildest nightmares.

Frightened by the ramifications of such alleged atrocities, I spent months living in denial. As a behavioral scientist, I was no stranger to the subject of man's inhumanity toward man. I just feared what further research might reveal.

Eventually, curiosity wore down my defenses, and I attempted, on several occasions, to contact Dr. Robert Strecker for an explanation. For months, then, the telephone number I had for him rang continuously unanswered. Secretly, I was thankful. The secondary sources of information I had about 'The Strecker Memorandum' were adequate for my needs, I rationalized. The few documents I had on the WHO theory of AIDS came from a wholistic physician I met at a National Wellness Association conference. For years, the doctor documented, the word on the street in the gay community and among the black intelligentsia was that HIV was created as a bioweapon - a man-made virus bearing stark similarities to the bovine lymphotropic virus (BLV) cultured in cows. [2] Although American authorities quickly moved to dispel the assertion, claiming African monkeys were the source of the scourge, Dr. Strecker insisted the germ came from cow and sheep sources.

Research showed a similarity between HIV and BLV. One report appeared in 'Nature' in 1987. [2] Strecker heralded this and argued it was virologically absurd to believe HIV came from the monkey. Especially "since there are no genetic markers in the AIDS virus typical of the primate, and the AIDS virus cannot thrive in the monkey." [3] Still, the majority subscribed to the African green monkey theory.

According to Strecker, whose work was reviewed by medical physician Jonathan Collin in a 1988 issue of 'Townsend Letter for

Doctors,' the AIDS virus:

". . . can and apparently does thrive in the cow, having essentially identical characteristics with the bovine virus and this, further, gives a hint of the role vaccinations have played in either accidentally or purposefully inducing the AIDS epidemic." [3] Collin reported that Strecker's research made sense, particularly considering the virology and evolution of the AIDS epidemic. Strecker's first point was that AIDS was nonexistent in Africa prior to 1975, and had it been the result of monkey bites occurring in the 1940s, as some alleged, the epidemic should have occurred in the 1960s and not late 1970s owing to the twenty-year timetable for case incidence doubling. [3]

More telling, Strecker obtained documents through the Freedom of Information Act (FOIA) that showed that the United States Department of Defense (DaD) secured funding from Congress in 1969 to perform studies on immune-system-destroying agents for germ warfare. [4] Strecker alleged that soon thereafter, the WHO, funded by the DOD, began experimenting with a lymphotropic virus that was produced in cows, but could also infect humans. The WHO, Strecker noted, also launched a major African campaign against smallpox in 1977, which involved the urban population, not the rural Pygmies. Had the "green monkey" been responsible for AIDS, Strecker professed, the Pygmies of rural Africa would have had a higher incidence of AIDS than the country's urban populations. The opposite is true. [3]

Strecker reportedly examined WHO research that revealed their scientists, in the early 1970s, had studied viruses that were capable of altering the immunologic response capacity of T-lymphocytes. He noted that such viruses were found in 1970, but only in some animals including sheep and cows, and that the latter species is used to produce the smallpox vaccine.

Literature provided by The Strecker Groups urged readers to:

"PLEASE WAKE UP!

In 1969 . . . [the] United States Defense Department requested and got \$10 million to make the AIDS virus in labs as a political/ethnic weapon to be used mainly against Blacks. The feasibility program and labs were to have been completed by 1974-1975; the virus between 1974-1979. The World Health Organization started to inject AIDS-laced smallpox vaccine into over 100 million Africans (population reduction) in 1977. And over 2000 young white male homosexuals (Trojan horse) in 1978 with the hepatitis B vaccine through the Centers for Disease Control/New York Blood Center. . . ."

Collin, in his review, added:

"Strecker remarks that it would be relatively easy to implant such

viruses in the cow carcasses used to produce the smallpox vaccine. When the smallpox vaccine sera was recovered from the animal carcasses, animallymphotropic viruses could be carried or mutated or incorporated in the vaccine. . . . [T]he epidemiology of multiple "contaminated" smallpox vaccines given in the early 1970s would provide exactly the right timetable for such a widespread AIDS epidemic in Africa today." [3]

Strecker vigorously promoted his theory that the AIDS virus was transmitted to the American homosexual community during the course of the experimental hepatitis B vaccination program sponsored by the USPHS between 1978 and 1979. [1,3,6] I recalled reviewing this research as a post-doctoral student at Harvard. [6]

At that time, Collin wrote:

"The USPHS notes the recipients were sexually active, having more than one sexual partner, and at particular risk for developing hepatitis. The homosexual populations given the vaccination were in six major cities, including New York, San Francisco, Los Angeles, St. Louis, Houston and Chicago. Epidemiologically, these cities now have the highest incidence of AIDS and ARC, as well as the highest death rates from AIDS. [3]

After reading this, I began to question more of what I learned about the origin of AIDS. My curiosity, piqued by the DOD appropriations request for 1970 (see fig. 1.1) beckoned me to investigate further.

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Fig 1.1 - Department of Defence Appropriations Hearings for 1970 on the Development of Immune-System Destroying Agents for Biological Warfare:

SOVIET CHEMICAL AND BIOLOGICAL WEAPONS

Mr. SIKES: The statements indicate that the Soviets have made extensive progress in chemical and biological weapons. I would like you to provide for the record a statement which shows what they are doing in this area and with some indication of their capabilities in this area.

Mr. POOR: We will be happy to provide that.

(The information follows:)

The Soviet Union is better equipped defensively, offensively, militarily, and psychologically for chemical and biological warfare than any other nation in the world. She has placed a great

deal of emphasis on these systems in her military machine. Utilizing a wide spectrum of chemical munitions, the Soviets consider that chemical tactical weapons would be used in conjunction with nuclear weapons or separately, as the case may dictate. The Soviet agent stockpiles include a variety of agents and munitions capable of creating a wide range of effects on the battlefield. The Soviet soldier is well equipped defensively. He trains vigorously and for long periods of time utilizing his equipment. He looks upon chemical as a real possibility in any future conflict, and respects his protective equipment. The research program in the Soviet Union for chemical warfare and biological agents has encompassed every facet from incapacitating to lethal effects, both offensively and defensively.

(Additional classified information was supplied to the committee [including the testimony below].)

SYNTHETIC BIOLOGICAL AGENTS

There are two things about the biological agent field I would like to mention. One is the possibility of technological surprise. Molecular biology is a field that is advancing very rapidly and eminent biologists believe that within a period of 5 to 10 years it would be possible to produce a synthetic biological agent, an agent that does not naturally exist and for which no natural immunity could have been acquired.

Mr. SIKES: Are we doing any work in that field?

Dr. MACARTHUR: We are not.

Mr. SIKES: Why not? Lack of money or lack of interest?

Dr. MACARTHUR: Certainly not lack of interest.

Mr. SIKES: Would you provide for our records information on what would be required, what the advantages of such a program would be, the time and the cost involved?

Dr. MACARTHUR: We will be very happy to.

(The information follows:)

The dramatic progress being made in the field of molecular biology led us to investigate the relevance of this field of science to biological warfare. A small group of experts considered this matter and provided the following observations:

1. All biological agents up to the present time are representatives of naturally occurring disease, and are thus known by scientists throughout the world. They are easily available to qualified scientists for research, either for offensive or defensive purposes.
2. Within the next 5 to 10 years, it would probably be possible to make a new infective microorganism which could differ in certain important aspects from any known disease-causing organisms. Most important of these is that it might be refractory to the immunological and therapeutic processes upon which we

depend to maintain our relative freedom from infectious disease.

3. A research program to explore the feasibility of this could be completed in approximately 5 years at a total cost of \$10 million.

4. It would be very difficult to establish such a program. Molecular biology is a relatively new science. There are not many highly competent scientists in the field, almost all are in university laboratories, and they are generally adequately supported from sources other than DOD. However, it was considered possible to initiate an adequate program through the National Academy of Sciences - National Research Council (NAS-NRC).

5. The matter was discussed with the NAS-NRC and tentative plans were made to initiate the program. However, decreasing funds in CB, growing criticism of the CB program, and our reluctance to involve the NAS-NRC in such a controversial endeavor have led us to postpone it for the past 2 years. It is a highly controversial issue and there are many who believe such research should not be undertaken lest it lead to yet another method of massive killing of large populations. On the other hand, without the sure scientific knowledge that such a weapon is possible, and an understanding of the ways it could be done, there is little that can be done to devise defensive measures. Should an enemy develop it there is little doubt that this is an important area of potential military technological inferiority in which there is no adequate research program.

[The above testimony of Acting Assistant Secretary of the Army for Research and Development, Charles L. Poor, was printed on page 79 of the public record cited below. However, Dr. MacArthur's above statements were deleted. Dr. MacArthur was, at the time, the deputy director of the Department of Defense. The complete testimony was found initially by military investigator Zears Miles and subsequently by attorney Theodore Strecker, J.D., through the Freedom of Information Act (on page 129 of the supplemental record). A copy of the original classified document was later published on page 124 of 'Deadly Innocence' by this author in 1994. Source: Department of Defense Appropriations for 1970. Hearings Before a Subcommittee of the Committee on Appropriations House of Representatives, Ninety-First Congress, Part 5 Research, Development, Test, and Evaluation, Dept. of the Army. Tuesday, July 1, 1969, page 79. Washington: U.S. Government Printing Office, 1969.]

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- [1] Strecker R. The Strecker Memorandum. The Strecker Group, 1501 Colorado Boulevard, Los Angeles, CA 90041, 1988.
- [2] Gonda MA, Braun MJ. Carter SG, Kost TA, Bess Jr JW,

Arthur LO and VanDer Maaten MJ. Characterization and molecular cloning of a bovine lentivirus related to human immunodeficiency virus. *Nature* 1987;330, 388-391; Mulder C. Human Aills virus not from monkeys. *Nature* 1988;333:396; See also: Penny D. Origin of the Aills virus. *Nature* 1988;333:494-495.

[3] Collin J. They deployed the AIDS virus. *Townsend Letter for Doctors*. April. 1988 p.152.

[4] Department of Defense Appropriations For 1970: Hearings Before A Subcommittee of the Committee on Appropriations House of Representatives, Ninety-first Conpess, First Session, H.B. 15090, Part 5, Research, Development. Test and Evaluation, Dept. of the Army. U.S. Government Printing Office. Washington, D.C., 1969.

[5] This text was typed at the top of page 129 in the document cited in reference #4 above. A portion of this DOD appropriations document was provided by The Strecker Group and published as document number RS-028. Los Angeles: The Strecker Group, 1988.

[6] Szmuness W, Stevens CE, Harley EJ, Zang EA and Oleszko WR et al. Hepatitis B vaccine: Demonstration of efficacy in a controlled clinical trial in a high-risk population in the United States.

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Chapter 2

WHO Plays in the Big Leagues

JACKIE, my wife and co-investigator had been instrumental in helping me research the Florida dental AIDS tragedy for 'Deadly Innocence.' [1]

The loving mother of our now two children, Jackie began her working career as a dental assistant for the Saskatchewan Dental Plan in Canada. We met in Cancun, Mexico, waiting in line at Carlos and Charlie's Bar and Grill. At the time, she was looking for a job and I needed an assistant. The rest is history.

Besides her big blue eyes, long silky auburn hair, slight build, and innocent appearance, what attracted me most about my future wife was her survival instinct. She had spent almost two months touring the back roads of Mexico virtually unchaperoned. This girl's a survivor, I respectfully considered.

Over the years, I found this trait increasingly comforting, particularly while confronting the many frightening realities we encountered during our research.

"The WHO Does What?"

"The only thing I know about the World Health Organization," I said to Jackie after learning of Strecker's theory, "is that it's a prestigious internationally supported organization that develops health and vaccination programs for developing countries."

It suddenly seemed odd to me that over the course of my training - more than four years of college, three years of dental school, ten years of postdoctoral research and teaching, and sixteen years of clinical dental practice - I had learned very little about the WHO.

"I don't even know what's involved in becoming a WHO member," I admitted. "The name sure imparts an air of scientific aristocracy."

Eventually, as the novelty of Strecker's theory wore off, and further attempts at contacting Strecker by phone failed, I decided to venture into the dungeons of Harvard's Countway Medical Library to prove "the null hypothesis" - that nothing was true about Strecker's memorandum. [2] What I unearthed, however, in back issues of the 'WHO Chronicle' was engaging.

Dozens of 'WHO Chronicle' articles that I photocopied and brought home revealed that by 1968 the WHO had been solely in control of the world's experimental "biologicals" for almost two decades. [3]

"WHO has exerted a powerful influence on the quality control of biological substances since its very inception in 1948. . . . Since 1952, when WHO interest in the establishment of international requirements for such biological products began, various possible measures have been examined for attempting to achieve a greater degree of uniformity in the quality, safety, and potency of vaccines, antisera, etc. . . . for the control of substances of particular interest to WHO in relation to its mass immunization and mass prophylaxis schemes in developing countries. . . . The main purpose served by these international standards, reference preparations, and reference reagents is to provide a means of ensuring worldwide uniformity in expressing the potency of preparations used in the prophylaxis, therapy, or diagnosis of human and animal disease." [3]

The coordinating body for all this work I learned was "the WHO secretariat." The Geneva-based organization maintained several full-time officers and part-time consultants who worked in collaboration with several other laboratories in other countries:

"The laboratories most deeply involved are the WHO International Laboratories for Biological Standards within the departments of biological standards of the Statens Seruminstitut, Copenhagen, the National Institute for Medical Research, London, and the Central Veterinary Laboratory, Weybridge,

England. Between them, these laboratories undertake the detailed work of organizing international collaborative assays and of holding and distributing the international biological standards and many of the international biological reference preparations and international biological reference reagents. The initiative for setting up standards and reference preparations usually comes from a WHO Expert Committee on Biological Standardization, which is convened annually in Geneva. It comprises recognized experts in the field, who serve without remuneration in their personal capacity and not as representatives of governments or other bodies, together with members of the WHO secretariat. This Expert Committee also establishes the international standards and reference preparations on the basis of the results of the international collaborative assays."

"For pharmaceuticals generally, still including some biologicals, the drawing up of standards is in the hands of the Expert Committee on Specifications for Pharmaceutical Preparations, in collaboration with the WHO secretariat and with the help of the Expert Advisory Panel on the International Pharmacopoeia and Pharmaceutical Preparations. Needless to say, close liaison is needed between the secretariat, the Expert Committee on Biological Standardization, the Expert Committee on Specifications for Pharmaceutical Preparations, and various other expert committees on, for example, antibiotics, tuberculosis, yellow fever, and cholera." [3]

Another article [4] discussed the WHO's "National control activities" which provided advice and encouragement when countries became "conscious of the need for controlling biologicals." WHO helped them establish and develop their "national controllaboratories." [3]

It was quickly apparent that the WHO set the standards for the development, manufacture, distribution, and administration of essentially all pharmaceuticals used throughout the world (see fig. 2.1). [3,4]

As seen in figure 2.2, they were also intimately involved in determining which drugs should be made or remain illegal. [4] Besides assembling teams of scientists to develop, test, and standardize new (and ancient) drugs, the WHO applied similar administrative leadership to develop plans for attacking all the woes of humanity. Polio, yellow fever, cholera, smallpox, whooping cough, diphtheria, tetanus, measles, anthrax, typhoid, tuberculosis, influenza, and even the common cold were all targeted. The WHO's approach to controlling communicable diseases was spelled out by their Assistant Director-General, Dr. A. M. Payne:

"Mass campaigns against certain communicable diseases require an initial attack sustained uninterruptedly over a relatively large area within a short period of time. . . . In smallpox, for instance,

the buildup of new susceptibles in the absence of routine vaccination creates an explosive situation resulting in the familiar pattern of epidemics of smallpox followed by epidemics of vaccination. . . " [5]

WHO's Developing Viral Network

Applauding WHO's support for pioneering work in viral research, Dr. D. A. Tyrrell reported the common cold (rhino) virus provided valuable insights into the burgeoning field of virology. In the early 1960s, WHO designated Tyrrell's research unit in the United Kingdom and the National Institutes of Health (NIH) in Bethesda, Maryland, as "two International Reference Centres. . . in order to promote their [respiratory virus] study," From here, newly developed techniques for virus cultivation, Tyrrell wrote, were widely applied:

"Hundreds of strains of rhinoviruses have been isolated and shown to be antigenically distinct from at least some other strains. They have been reported in the scientific literature under a confusing variety of designations, and it was accordingly decided at a meeting of the Directors of the WHO Virus Reference Centers to undertake collaborative study in which sera and strains were distributed to a number of laboratories so that cross neutralization tests could be performed of all well-characterized and apparently new strains. This work was supported by the US Vaccine Development Board [emphasis added] and coordinated by the two WHO International Reference Centres. . . ."

"Work on these viruses," Tyrrell continued, demanded "a supply of cells" that were "sensitive to such organisms." It required considerable work to find such cells. Often cell lines would "change their sensitivity after prolonged cultivation." The Reference Centres, thus, maintained stocks of cells, "stored in liquid nitrogen," which they distributed to labs conducting viral research throughout the world.

Some viruses that failed to grow in the usual tissue cultures, Tyrrell revealed, "were propagated in cultures of the human trachea and nose," that is, "in the organs and tissues in which they multiply in nature." These viruses, some "new rhinoviruses," and other new types "never before detected in man were "disseminated through the WHO network of Virus Reference Centres." [6]

"So, let me get this straight," Jackie said. "World renowned scientists developed WHO policies and practices, studied and distributed viruses, with financial support from groups like the 'U.S. Vaccine Development Board.' Was the board, like the WHO connected to any pharmaceutical companies?"

"I'm not sure," I replied, "but most likely. There was obviously lots of money to be made with vaccines, and only a few companies made them."

"Which ones?"

"Well Merck, Sharp and Dohme (MSD) is one of the largest, and they did fund the hepatitis B vaccine research Strecker alleged spread HIV to homosexuals in America."

Another report four months later showed Israeli scientists were supported by the WHO to study the genetic determinants of the human immune response. [7]

A few others stated that the WHO was funding several programs designed to evaluate the specific disease vulnerabilities of minority groups - from American Indians [8] to African natives [9] - through the collection and analysis of "gene pools" and "blood supplies." [10]

"That's just what the Nazis did," Jackie recalled.

"Here are a couple more articles noting the WHO and the U.S. Vaccine Development Board also funded 'large-scale human trials' of newly developed vaccines made from both bacterial and viruses." [12,13,14]

"Let me see."

I passed the reports over to my co-investigator.

"Just as Strecker reported," Jackie said after reading the articles carefully.

"Yeah. I hate to say it, but maybe there's something to his theory. Their 'smallpox eradication program' used vaccines made from antisera made largely in the United States and given for free to African countries, including Kenya, Ethiopia, Guinea, The Democratic Republic of the Congo, and Rwanda.

"The Democratic Republic of the Congo, which eventually became Zaire, they said would 'have a sufficient production capacity to supply the needs of all the African countries south of the Sahara.'" [13,14]

"That's interesting, and very noble," Jackie retorted somewhat cynically. "Zaire-the center of the African AIDS belt-supplying neighboring countries with the technology and expertise they needed to become healthier and more self-sufficient is great. I only wonder who paid for it and why?"

"I just read that their vaccine development committee endorsed a 1970 African campaign budget of \$14 million," I answered. [15]

"That was a lot of money for those days."

"About how much in present dollars?" I asked my more mathematically gifted partner.

"Say about five times that, around \$70 million."

"Much of it apparently came from the United States and other world governments interested in Africa. And periodic infusions of more cash for revaccination campaigns were needed and supplied." [16]

The Lausanne Laboratories

In 1964, shortly after President Kennedy's assassination, the WHO created the International Reference Centre for Immunoglobulins at the University of Lausanne, Switzerland. Three years later, the WHO Regional Reference Centre for Immunology (Research and Training) was designated at the same site. Its director, Dr. Rowe, reported that the center was established to broaden the WHO's "range of activities" in-so-far-as the "study of antibodies and immunoglobulins," the naturally produced proteins that defend the body against attack by toxins and germs. Rowe noted the WHO's special interest in cell-mediated immunity, that is, the cells that recognize antigen (foreign proteins associated with germs and toxic substances), secrete antibody, and are themselves able to attack foreign cells. Primary defense cells, called lymphoid cells, Rowe noted, were under intensive investigation to determine how they initiated and maintained the immune system, "paramount. . . in determining the pathogenic effects of infectious agents ranging from viruses to parasites." [17]

"Apparently their experiments went well," I remarked. "In December 1969, the WHO issued its second five-year research report on viral experiments it had funded or conducted since 1959."

The report stated,

"In the years 1964-68 the principal advances in virology were in knowledge of the fundamental structure of viruses and cells and of their interrelationships and interactions. A much greater understanding was gained of the natural behavior of viruses as infectious agents, of the pathogenesis of virus diseases, and of the means of controlling many of the common virus diseases - generally by improving existing vaccines or by developing new ones."

"Though direct proof of a causal relationship between viruses and human cancer still escapes the numerous investigators working on this subject, the quest continues to be energetically pursued. The hypothesis that at least some malignant neoplastic diseases such as leukemia are associated with virus infection is perhaps even more strongly expressed now than in the past." [18]

The article went on to state that Russian and American researchers were privy to the same vaccines, viral samples, and information about how the human immune system could be bolstered or destroyed by old and newly developed germs, including those produced from monkey viruses. [17,18]
"All this during the cold war," Jackie noted.

Green Monkeys, "Slow" Viruses, and \$10 Million

"Strecker's material said that the DOD provided one contract in 1970 for \$10 million for the development of a synthetic biological agent with no natural immunity. Which WHO reference center got that?" Jackie asked.

"It had to have been one in the U.S."

"For sure, but where?"

"There were only two possibilities," I said, "Atlanta, Georgia, and Bethesda, Maryland." [17-19]

The Atlanta lab, was run by the CDC's predecessor - the National Communicable Disease Center (NCDC). The Bethesda lab was run by the NIH. The later was cited in the WHO Chronicle as one of the initial two International [virus] Reference Centers. Yet, it was reported to be inadequately equipped to handle dangerous smallpox viruses. These were allegedly handled in Atlanta.

"If that's the case, it's not likely they would have handled deadly viruses like HIV either," Jackie reasoned.

"Not necessarily," I responded. "The smallpox virus and the DOD requisition may have posed different risks."

Shortly after our conversation, an article by Charles Siebert in 'The New York Times Magazine' clarified the biological safety level (BSL) risk rating system used by the CDC and the NIH:

"In the hierarchy of precaution taken against biological threats at the CDC, BSL I and 2 are the lowest level of safety. Work is done there only with non - or moderate-risk organisms - viruses that cause colds, for example, or bacteria that cause diarrhea. At BSL 3, known as "the hot zone" or the "blue suit lab," workers visit with highly transmissible viruses or with those viruses or bacteria for which there is no known cure. There are only two BSL 4 labs in the country, one at the United States Army Medical Research Institute for Infectious Diseases [USAMRIID] at Fort Detrick in Frederick, Md., and the one in Atlanta." [20]

Our road atlas showed us Frederick was very close to Bethesda. I picked up the telephone to learn more.

An administrator at the NCI's Thmor Cell Biology Lab in Bethesda confirmed Siebert's report. Additionally, the woman told me, "The AIDS virus is considered a BSL 3 hazard. It's being studied in Bethesda as well as numerous labs across the nation."

We also learned that, once developed, the most dangerous viruses planned for use as biological weapons were shipped to the Pine Bluff Arsenal for storage. [21]

Among the tens of thousands of viral strains cultured, developed, and transported for study by WHO reference centers, we learned that two received special attention and an inordinate share of research dollars: monkey viruses, including the simian pox virus, and the "slow" viruses, particularly visna and scrapie. [17-19, 22]

We read these reports carefully since Strecker noted the AIDS virus bears the greatest likeness to the human-bovine (cow)

lymphotropic (lymph-cell-targeting and cancer-causing) virus combined with sheep visna virus. [2]

Monkeypox was of great interest to researchers, the 'WHO Chronicle' said, for two reasons. First, the monkeypox virus was found closely related to the variola-vaccinia virus group, which causes and immunizes against human smallpox. Second, the monkey is man's closest relative in the animal kingdom, and experimental results using monkeys were expected to provide the best indication of what might occur in humans exposed to the same elements. [17-22]

Alternatively, "slow" viruses were of the greatest interest to WHO, CDC, NIB, and NCI scientists between 1968 and 1974. The reasons for this were not as obvious. The 'WHO Chronicle' reported:

"Recent interest in the "slow" viruses, in particular those causing chronic degenerative disease of the nervous system-the CHINA (chronic infectious neuropathic agents) viruses-has come from painstaking work with visna and scrapie, degenerative diseases of the central nervous system of sheep, and kuru, a degenerative disease of the central nervous system of man restricted to the Fore people of New Guinea and their immediate neighbours." [18]

"Why so much interest in two sheep viruses that cause nerve disorders and don't infect humans?" Jackie asked.

"I'm not sure."

"And what about kuru? Who are the 'Fore people of New Guinea'?"

What makes them so important that viral centers around the world took up their cause?"

"Well, let's look it up." I walked over to our library and pulled out a copy of Steadman's Medical Dictionary.

"Kuru, it says is":

"A highly localized, fatal disease found in New Guinea, resembling paralysis agitans [a nervous disorder with frequent bouts of shaking]; found among certain cannibalistic people who ingest raw brain of recently deceased victims of the disease. Also called a laughing sickness." [23]

"When in history has helping cannibals been a world priority?" I wondered.

"Never," Jackie responded. "The notion seems utterly harebrained."

"Oh. That was awful."

"Sorry, I couldn't help myself."

We read on:

"CHINA viruses are distinguished by the languishing character of the infection process they initiate. The incubation period in the

host may be months or years, and the disease itself may progress laggardly towards an irreversible deterioration of the victim. Cells infected with "slow" viruses are in general neither impaired nor stimulated to proliferate. Their functions are impaired but the nature of the dysfunction has not as yet been clarified." [18]

"It's remarkable how closely this matches several of the most prominent features of AIDS," I said. "And there's more":

"The resistance of the scrapie agent to heat, ether, formalin, and other enzymatic and chemical agents, as well as its very small particle size, poses the question whether it is a conventional virus, an incomplete virus, or some other agent. . . . The findings of different [research] groups are at variance and in several instances are totally inexplicable within our present concept of infectious agents. . . ." [18]

"That reads just like the DOD order for a 'new infective microorganism' that couldn't be defended against," I remarked. The article went on to state that additional experiments had been conducted in order to prompt the human immune response "by the injection of double-stranded RNA." [18]

"HIV is a single-stranded RNA 'slow' virus," I explained. "And gene cutting and splicing techniques were well developed at that time." [24]

"Could they have cut double-stranded RNA to make single stranded RNA?"

"I'm not sure, but what I don't understand is, here, the 'WHO Chronicle' stated the primary objective of their viral research program was "to acquire a thorough knowledge of the virus diseases so that prophylactic and other public health measures can be introduced as soon as possible." [18]

"What's the matter with that?"

"Look at what they were studying to accomplish it. Two rare diseases that only affect sheep and one totally remote virus that makes brain eaters laugh themselves to death."

"Do you think they might've been looking at these things for use as biological weapons?" Jackie asked and then added, "Think about it - scrapie - a totally unconventional germ that they're not even sure what it is. You can't kill it with heat or chemicals, and there are 'still no tissue culture systems or antibody systems' by which enemy defenses could be prepared."

"And 'at variance' and 'totally inexplicable' with the current knowledge at that time," I added, "the enemy would not only be surprised, but baffled and helpless."

We reflected again on the DOD document that detailed their desire to acquire:

"a new infective microorganism which could differ in certain important aspects from any known disease-causing organisms. Most important of these is that it might be refractory to the

immunological and therapeutic processes upon which we depend to maintain our relative freedom from infectious disease."

"It is a highly controversial issue and there are many who believe such research should not be undertaken lest it lead to yet another method of massive killing of large populations. . . ." [25]

The following week we learned that despite heavy opposition by the public and House of Representatives, the United States Congress gave the Army \$23.2 million for biological warfare research. About half of that, at least \$10 million of taxpayer money, went directly toward funding the manufacture of immunosuppressive agents allegedly for defense. [26]
"In essence, this one 1970 DOD biological weapons appropriation cost more than half of all the money the WHO spent in Africa that year for all of their health care and vaccination programs." Jackie calculated.

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Fig 2.1 - WHO Requirements for Biological Substances:

Year	Subject
1958	General Requirements for Manufacturing Establishing and Control Laboratories (revised in 1965)
1958	Poliomyelitis Vaccine (Inactivated) (revised in 1965)
1958	Yellow Fever Vaccine
1958	Cholera Vaccine (revised in 1968)
1958	Smallox Vaccine (revised in 1965)
1959	General Requirements for Sterility of Biological Substances
1961	Poliomyelitis Vaccine (Oral) (revised in 1965)
1963	Pertussis Vaccine
1963	Procaine Benzylpenicillin in Oil with Aiuminium Monostearate (revised in 1965)
1963	Diphtheria Toxoid and Tetanus Toxoid
1965	Dried BGG Vaccine
1965	Measles Vaccine (Live) and Measles Vaccine (Inactivated)
1966	Anthrax Spore Vaccine (Live-for Veterinary Use)
1966	Human Immunoglobulin
1966	Typhoid Vaccine
1967	Tuberculins
1967	Inactivated Influenza Vaccine
1969	Immune Sera of Animal Origin (to be published)

Source: Mathews AG. WHO's influence on the control of biologicals. 'WHO Chronicle' 1969;23;1:3-15.

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Fig 2.2 - WHO's influence on the control of Biologicals
Involving the development of International Standards Regulating
Pharmaceuticals:

WHO'S INFLUENCE ON THE CONTROL OF BIOLOGICALS

by A. G. Matthews*

(*Chief of Quality Control, Commonwealth Serum Laboratories, Melbourne, Australia. The article is based on a paper presented to the Australian Pharmaceutical Science Association at a seminar on drug control, University of Otago, Dunedin, New Zealand, February 1968)

This seems to be a most appropriate time to review the work of WHO in relation to the quality of biological products, for in 1968 the Organization completed its twentieth year of existence. It is during its second decade that WHO has exerted a particularly direct influence in this field, by virtue of the establishment of a series of Requirements for Biological Substances (see Table 1).

International biological standards

However, in a somewhat less direct fashion, WHO has exerted a powerful influence on the quality control of biological substances since its very inception in 1948. The work of setting up and distributing international biological standards was not started by WHO but was taken over, already in an advanced stage of development, from the Health Committee of the League of Nations. Indeed the first few international standards for biological substances were established by a national body, the Statens Seruminstitut, Copenhagen, a few years before the creation of the Health Committee.

The very first such standard - the International Standard for Diphtheria Antitoxin, which consists of a dried hyperimmune horse serum - was established in 1922 and it is still in use today. It says much for the forethought and wise choice of the early authorities, as well as for the stability of at least some biological products, that a single preparation has served world requirements for a period of 46 years. The supply of this particular standard is expected to last for at least another 46 years.

From this small start in 1922, and up until 1948, when WHO was established, the number of international standards distributed by the League of Nations grew to 32, in the categories enumerated in Table 2. The total number of international biological standards issued by WHO is now 79, and in addition there are 56 international biological reference preparations. Also, in recent years, 96 international biological reference reagents have been established by WHO. Generally, these are intended as reference materials for

substances used in the diagnosis of disease and in the identification of micro-organisms. Many leptospiral typing antisera are included among these reagents, and a recently established set of viral typing antisera is being rapidly expanded. Table 2 gives a classification of the current international preparations, with comparative figures for 1948.

In general, the main purpose served by these international standards, reference preparations, and reference reagents is to provide a means of ensuring world-wide uniformity in expressing the potency of preparations used in the prophylaxis, therapy, or diagnosis of human and animal disease. Most of the substances for which these international standards, etc. have been established could not, at least at the time of their establishment, be characterized fully by chemical and physical means. The activity of an ill-characterized substance may be measured by biological assay, and the results may be best expressed as a ratio of its activity to the activity of a closely similar physical specimen, designated the international standard. In many cases, the defining of an international...

[One of numerous 'WHO Chronicle' reports obtained from Harvard's Francis Countway Medical Library during an initial investigation into the origin of AIDS. Source: Mathews AG. WHO's influence on the control of biologicals. 'WHO Chronicle' 1969;23;1:3-15]

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[1] Horowitz LG. Deadly Innocence: Solving the greatest murder mystery in the history of American medicine. Rockport, MA: Tetrahedron, Inc., 1994. Includes a chapter titled "The Clinton-CIA Connection" which relays the story told by ex-intelligence asset Terry Reed. According to Reed's Compromised (S.P.I.Books, 1993), much of the Iran-Contra affair-the drugs for arms and hundreds of millions of dollars of laundered cash-was apparently handled by Clinton administration officials under a Banana Republic set up by the CIA and agents William Barr and Oliver North during the Reagan era.

[2] Strecker RB. The Strecker Memorandum: The cause, the effects and the possible cure for the pandemic AIDS. Eagle Rock, CA: The Strecker Group, 1988.

[3] Mathews AG. WHO's influence on the control of biologicals. WHO Chronicle 1968;23; 1 :3-15.

[4] Glatt MM. The development of international control of drugs. WHO Chronicle 1970;24;5: 189-197.

[5] Payne AAM. Approaches to communicable disease control: Specialized and integrated services. WHO Chronicle 1968;22;1:3-7.

- [6] Tyrrell OAJ. The common cold research unit: WHO International Reference Centre for respiratory virus diseases. WHO Chronicle 1968;22;1:8-11.
- [7] WHO News and Notes. Genetic susceptibility to infection. WHO Chronicle 1968;22;4: 162.
- [8] WHO News and Notes. Studies of the American Indian. WHO Chronicle 1968;22;10:459
- [9] Barrai I. Human genetics and public health. WHO Chronicle 1970;24;6:246-247.
- [10] WHO Report. Multipurpose serological surveys. WHO Chronicle 1971;25;3:99-101.
- [11] WHO News and Notes. Large-scale BCG trials. WHO Chronicle 1968;22; 11 :496.
- [12] WHO Current Research Projects. Live measles vaccines. WHO Chronicle 1968;22;12:534-5.
- [13] WHO Report (Based on a report presented to the Twenty-first World Health Assembly, and on discussions at the Assembly.) The smallpox eradication programme. WHO Chronicle 1968;22;8:354-362.
- [14] WHO Report (Based on a report presented to the Twenty-second World Health Assembly.) The smallpox eradication programme. WHO Chronicle 1969;23; 1 0:465-476.
- [15] WHO News and Notes. Regional Committee for Africa. WHO Chronicle 1969;23;8:341-344.
- [16] Unfortunately, with the smallpox vaccination as with hepatitis B vaccination, the WHO reported that "in persons vaccinated only in infancy, the incidence of smallpox increases with age as immunity diminishes; the data indicate a high degree of protection for 4-5 years, followed by a slow decline, but even after a longer period, smallpox in vaccinated persons is usually milder than in unvaccinated persons and this appears to indicate some residual immunity. Similarly, the difficulty in producing a major reaction to revaccination lessens with time, but even after 10 or 20 years the vaccine required to produce a high percentage of takes must be at least 5-10 times more potent than vaccines that will produce the same percentage of takes in primary vaccinations. The duration of immunity after revaccination cannot be assessed accurately because not enough is known about the occurrence of smallpox in successfully revaccinated persons. . . ."
- Quotation from: World Health Organization Report. Communicable diseases in 1970: Some aspects of the WHO programme. WHO Chronicle 1971 ;25;6:249-255.
- [17] Rowe OS. The WHO immunology laboratories at Lausanne. WHO Chronicle 1968;22;11:496.
- [18] WHO Report (Based on the 1969 report The medical research programme of the World health Organization, 1964-1968, Geneva.) Five years of research of virus diseases. WHO Chronicle 1969;23;12:564-572.
- [19] Kalter SS and Heberling. The study of simian viruses. WHO

Chronicle 1969;23;3:112-117.

[20] Siebert C. Smallpox is dead: Long live smallpox. The New York Times Magazine, Sunday, August 21, 1994, Section 6, pp. 31-55.

[21] Walsh J. Civilian use for biological warfare facility under study. Science 1970;167;923: 1359.

[22] Henderson OA and Arita I. Monkeypox and its relevance to smallpox eradication WHO Chronicle 1973;27;4:145-148.

[23] As defined in Stedman's Medical Dictionary, Kuru is a "highly localized, fatal disease found in New Guinea, resembling paralysis agitans; found among certain cannibalistic people who ingest raw

brain of recently deceased victims of the disease. Also called laughing sickness."

[24] Lederberg J. Biological warfare: a global threat. American Scientist. 1971;59;2:195-7.

[25] Department of Defense Appropriations For 1970: Hearings Before A Subcommittee of the Committee on Appropriations House of Representatives, Ninety-first Congress, First Session, H.B. 15090, Part 5, Research, Development, Test and Evaluation, Dept. of the Army. U.S. Government Printing Office, Washington, D.C., 1969.

[26] Washington Correspondent. Gas and germ warfare renounced but lingers on. Nature 1970 228;273:707-8.

Chapter 3

Cold War, Biological Weapons, and World Health

THE Francis Countway Memorial Library is a stone's throw from Harvard's School of Dental Medicine where I had served on the faculty. A modern structure of glass and concrete, the building looks somewhat misplaced amid the grandeur of its centuries old Gothic marble neighbors.

What seemed ironically amusing about the building is that this tribute to health science learning would be diagnosed as a "sick building." After a couple of hours in the Countway, people commonly became ill. Headaches and dizziness were the most frequent symptoms. The graduate students next door at the School of Public Health always joked that the library was contraindicated for women in their third trimester of pregnancy. Nevertheless, here's where I conducted most of my post-doctoral research.

Access to Countway from Boston's Northshore was relatively painless. An hour's train-ride dropped me off at the old Boston Garden. Two transfers and a half-hour later I disembarked the Huntington Avenue street car on Harvard medical turf. A brief trek through two concrete corridors, a pair of glass doors, and a guarded gate, and I was at work.

The first floor of Countway is mostly administrative offices, reference books, and on-line services. Computer literature searches are easily conducted here. The Index Medicus and current stacks are located down an open stairway on the first lower level. Current periodicals are neatly arranged on display shelves filling the south side of the gymnasium-size floor. Work desks line the walls and are in greatest demand on the same sunny side of the room.

The older stacks and copy machines are all in the basement. There is no natural light here and barely any oxygen. At the heart of this floor are eight high-speed copiers. All are almost always in use filling the room with heat and noise. Faculty and students alike await their turns seated uncomfortably at the center of the room on cracked black vinyl love seats. The lights flicker like a strobe. This is Countway's dungeon-where I accessed the scientific literature dating to the late 1960s. Sweat and time quickly disappeared here.

Prelude to a Protocol

After our cursory review of early 'WHO Chronicle' reports, my search was on for articles about biological warfare (BW). There were many.

In February 1967, as international protests resounded against the Vietnam War, more than 5,000 domestic scientists petitioned President Lyndon Johnson (and soon thereafter Richard Nixon) to "reexamine and publicly state" the government's research and deployment policies on chemical and biological weapons. Their request was met with stoic silence. Notes from White House science adviser Donald Hornig to correspondents simply said, "thank you for your interest in national security." [1] The official government position on chemical and biological warfare (CBW) had been articulated by Deputy Defense Secretary Cyrus Vance a year earlier:

"I have indicated that we seek international understandings to limit chemical and biological warfare and that we have not used weapons of the sort condemned by the Geneva protocol. [Though "agent orange," the powerful defoliant, was being used heavily in Vietnam at that time, only later was it acknowledged to be highly toxic to humans as well.] I should also point out that we have at the same time maintained an active chemical and biological program. In the last few years we have placed increasing emphasis on defensive concepts and material. As long as other nations, such as the Soviet Union, maintain large programs, we believe we must maintain our defensive and retaliatory capability. It is believed by many that President Roosevelt's statement in 1943 which promised "to any perpetrators full and swift retaliation in kind" played a significant role in preventing gas warfare in World War II. Until we achieve effective agreement to eliminate all stockpiles of these weapons, it may be necessary in the future to be in a position to make such a statement again." [1]

Worldwide Protests

Between 1967 and 1972, debate raged over whether America's CBW industry should be scrubbed [2-5] or bolstered.[6,7] Dr. Joshua Lederberg relayed the consensus of protesters in a 1971 'Science' article. [8] Germ warfare he wrote:

". . . has been universally condemned as a vile perversion of scientific insight. This emotional reaction is buttressed by a rational consideration of the strategic and political instabilities that would follow from threatened uses of biological weapons and of the possibilities of worldwide spread of infectious disease. In the interest of world order and to reduce the possibilities of igniting world conflict, the development, stockpiling, and general accommodation of biological weaponry must be controlled by international agreement."

Lederberg, a professor of genetics at Stanford University's School of Medicine described work in synthetic small gene

assembly. He warned that very soon through "chemical operations on DNA components," researchers would be able to synthesize small viruses and engineer their design "to exquisite detail." He argued that biological weapons stand "apart from all other devices in the actual threat that it poses to the health and life expectancy of every human being whether or not he is politically involved in belligerent actions." [8]

"In a word, the intentional release of an infectious particle, be it a virus or bacterium, from the confines of the laboratory or of medical practice must be condemned as an irresponsible threat against the whole human community. . . ."

"We have learned in recent years that viruses undergo constant evolution in their own natural history, not only by mutations within a given strain, but also by the natural cross-hybridization of viruses that superficially appear to be only remotely related to one another. Furthermore, many of us carry viruses in our body cells of which we are unaware for years and which may be harmless - though they may eventually cause the formation of a tumor, or of brain degeneration, or of other diseases. At least in the laboratory, we can show that such latent viruses can still cross-breed with other viruses to give rise to new forms. . . ."

"We are all familiar with the process of mutual escalation in which the defensive efforts of one side inevitably contribute to further technical development on the other, and vice versa. . . . And the potential undoubtedly exists for the design and development of infective agents against which no credible defense is possible, through the genetic and chemical manipulation of these agents." [8]

'Nature,' 'Science,' and 'Lancet' published dozens of articles expressing grave concerns over the fate of humanity should biological weapons research continue. One such article entitled "The Biological Bomb," written by an anonymous author, discussed the ethical implications of biological weapons research - an industry that lay "at the heart of the cellular nucleus, ticking us to destruction." [9]

Dr. V. W. Sidel, a Boston physician, declared that not only should medical personnel refuse to participate in such activities, but physicians "must actively protest against the development, production, and use of biological weapons." Failure to do so, he argued, represented an insult to the medical profession, complicity, and one of the greatest dangers to society. [9]

Scientists could not "retain public esteem if they did nothing about the present state of the world," declared another protestor. The delicate balance between good and evil was "changing rapidly" and the "present juncture" was seen as crucial. [9] In Britain, several groups frustrated by the secrecy surrounding

experiments conducted at Porton, England's CBW research facility, lobbied their government too. Protestors included Nobel Prize winners Professor Sir Cyril Powell, Professor H. F. Wilkins, and Dr. F. Sanger. All desired to have the Ministry of Health assume responsibility for Porton from the Ministry of Defense to assure that all CBW research would be strictly defensive.' [10]

Another English notable, Lord Ritchie-Calder, summoned support for an international biological weapons accord and haled one group of scientists who were devoted to preventing diseases over another who was busy "devising man-made epidemics." [9] Likewise, another anonymous author published in 'Lancet':

"The whole field [of biological warfare] bristles with difficulties. Organisms for biological warfare can be produced quickly, cheaply, and easily; many are required in ordinary and perfectly legitimate ways for production of vaccines; clandestine research could easily be conducted; storage is scarcely necessary, for chemical plants and even breweries could be quickly switched to producing harmful microorganisms in enormous quantities; and delivery systems are multiple. . . ."

"The Government could give a sound basis to its Geneva proposal by declaring all future work carried out at Porton declassified. . . . This would carry especial conviction if. . . it were linked to participation with WHO. . . . In 1963 Prof. Roger M. Herriott! of the Johns Hopkins School of Public Health, suggested that the United States should offer to place its biological laboratories under WHO if Russia and other countries agreed to do the same. The risks to national security in this procedure are a good deal less than might be thought, for despite all the secrecy, it seems to be difficult for any country to steal a march on another in this sphere where the essential basic knowledge is so readily obtainable."

"These large and frankly political questions may hardly seem of pressing concern to the medical profession. But biological warfare implies a misuse of medical science for which doctors cannot evade responsibility. Medical knowledge and medical participation are inherent in most of its projects, and the profession's silence on this issue is liable to be interpreted as consent. The secrecy demanded is also contrary to the principles of medical ethics and is totally rejected in every other medical activity. If the fetters of secrecy were discarded and an international orientation adopted, more immediate and constructive thought could be given to feeding the world's 1000 million under-nourished citizens." [12]

Though this author's heart was in the right place, I thought it naive to think that placing all "biological laboratories under the WHO's control," would have made any difference. Americans

were sharing secrets with the Russians through the WHO network anyway.

Moreover, the WHO made it clear that security wasn't an issue. They expressed their objections to safeguarding DNA research this way:

"The requirements for high security laboratories may be an inordinate burden (who, in fact will pay for them?) in relation to the prospective gains. The best strategy here seems to be the development of safe vectors: plasmids and bacteria engineered to have little chance of survival outside the laboratory. In fact, in the long run this is a safer procedure than relying upon uncertain human compliance with fixed rules and regulations." [13]

Discussing the "remaining controversies" in the field of genetic splicing and hazardous germ development - techniques that require "rather complicated analyses of the remotest kinds of risks," WHO reported:

"Those who regard themselves as guardians of the public safety must count not only the speculative hazards of these marginal situations, but also the costs to the public health of impeding their investigation."

"This partly voluntaristic [recommended] approach will not satisfy a demand for absolute assurance that no foolish experiment is ever attempted. But the history of human institutions should suffice to show that no system of sanctions can have such a perfect outcome." [11]

These were the WHO's reservations to safeguarding hazardous gene research despite the fact that the one who brought the issue of increasing security to the floor of WHO debate was Professor Lederberg. The world renowned geneticist, Lederberg, at the time, was serving as a member of the WHO's Advisory Committee on Medical Research. [13]

The Proponents of CBW Research

My computer search also revealed that though opponents of CBW research appeared to outnumber proponents by at least three to one, the typical BW advocacy position was expressed in numerous publications. Donald McCrary in *Science*, for instance, wrote:

"What is apparently overlooked and totally ignored by these petitioners is that [the war in Vietnam] . . . is not an academic exercise divorced from life and death. It is a very real exercise in how to achieve a goal, however distasteful, with a minimum of casualties among our own combat personnel. I believe that any

technique, weapon, tactic, or strategy that will minimize casualties among our combat personnel is right, and any technique, tactic, or strategy that preserves the combat effectiveness of our opponent is wrong." [14]

But in March 1970, even WHO consultants noted that all biological agents permit the danger that if a disease capable of spreading widely is produced, it may get out of control and become "a source of disaster to the attacker as well as the attacked."

"The viral infections suitable for use in warfare include yellow fever, tick-borne encephalitis, Japanese encephalitis, dengue, Venezuelan equine encephalitis (VEE), chikungunya, O'nyong-nyong, Rift Valley fever, influenza, and small-pox. Tick-borne encephalitis may be taken as an example of the agents belonging to this group. Susceptibility is almost universal, and the ease with which the Far Eastern virus can be grown in the laboratory and its high infectivity and lethality by the aerosol route make it likely that a case fatality rate of 25% would be achieved. . . ."

"The attacking country could, of course, attempt to protect itself, e.g., by immunization, but. . . more virulent forms of the organism concerned might develop or the massive doses used might be such that ordinary levels of immunity would be useless. **Thus it is possible that biological agents may be used tactically, rather than strategically, to achieve the simultaneous infection of key groups of people, and the military consequences might well be of major importance. . . .** A decision to develop chemical and biological weapons implies that they will ultimately be used." [emphasis added]

The consultants even predicted "a virulent mutant" that could "spread rapidly to produce an uncontrollable epidemic on a large scale." In addition, they warned, if mutants were deliberately produced, there was the "ever-present risk of an accidental escape." [15]

Psychosocial Consequences

WHO consultants additionally predicted grave psychosocial consequences of such an escape, including mass hysteria:

"They thus present a real danger that is conducive to both anxiety and fear. Anxiety in particular may result from the fact that many chemical and all biological agents are undetectable by the senses, so that there are no warning signs to enable people to defend themselves. In addition, with biological agents, there is the latent period between infection and illness and the fact that the extent to which an infection may spread through a community is

unpredictable. As a result, an exposed person cannot be sure whether he has been infected or know how ill he will be or when the danger has passed. A further confusing factor is that many of the symptoms of illness are also symptoms of emotional stress." [15]

That sounded remarkably similar to the "fear of AIDS epidemic" I had frequently written and talked about. [16-18]
In the event of an attack, the researchers added:

"Panic. . . may be so great that. . . those who have not been affected will view those who have as potential agents of disease. The response to a chemical or biological attack may require precautionary or other measures on such a scale that extraordinary means of social control will have to be introduced and these may remain in force long after the need for them has passed. Thus, an attack may lead to social changes out of all proportion to the actual damage done."

Isn't that interesting, I thought. They even predicted social changes like the need to legislate AIDS as a disability rather than a disease, and requiring infection control measures that have yet to prove their value in saving costs or lives.

WHO consultants further predicted that the masses would try to avoid anything that would bring them in contact with deadly germs. Much of this avoidance was expected to be disproportionate to the actual risk.

In my role as a health professional AIDS educator, I recalled several similar experiences. One had occurred a few weeks earlier following a television interview in Rockford, Illinois. A viewer called me at the station to express her concern about leaving her house. The last time she went shopping, she said a storekeeper handed her a box of laundry detergent. She noticed a few cuts on his hands and refused to touch him or the box. She just panicked, left the store, and hadn't gone shopping since.

"Even though casual contact can't transmit HIV," I said to the station receptionist, "people are still afraid-especially of shaking hands with AIDS patients or HIV carriers." Exactly what was predicted, I reflected.

Besides this, the consultants even envisioned extensive health and medical emergencies as a consequence of a biological attack, "including mass illnesses, deaths, and epidemics." They expected that "WHO might be called upon to furnish technical assistance in dealing with allegations that chemical or biological weapons had been used. . . and in achieving disarmament." [15]

The authors concluded:

"As long as research on the military use of chemical and biological agents is continued. . . new agents of even greater destructive power [may be discovered]. . . . It is clear, therefore, that the best interests of all Member States, to say nothing of

mankind in general, require that the development and use of chemical and biological agents as weapons of war be outlawed in all circumstances. The nations of the world must renounce the use of such weapons, in accordance with the resolutions on chemical and biological warfare adopted by the United Nations General Assembly and the World Health Assembly." [15]

Sadly, I realized, their notice fell before blind eyes. Army medical scientists allegedly wanted vaccines and diagnostic methods developed quickly in the event of a viral attack. [19] Between 1967 and 1968, the Johnson administration languished amid cries for America's withdrawal from Vietnam. Richard Nixon was then propelled to the White House and soon thereafter, toward détente. Superficially, under Nixon, the world seemed safer. But in the viral research laboratories of the NIH, the "cold war" raged. During this time, the NCI, under NIH administrative direction, provided the CDC with prototype "reagents"-viruses, vaccines, antibodies, and cell lines-as the American and international viral research program advanced. [21-23]

Who Bit First, the Texan or the Simian?

Once we considered the cold war climate in which bioweapons research advanced, we reviewed the WHO's written accounts of the NIH's and NCI's primary role in manufacturing human "prototype" viruses, including new strains of simian viruses, for world distribution and testing. [21-23]

In 1969, the WHO Chronicle reported:

"Representative working stocks and. . . [vaccines] for the various viruses are being prepared and tested. The distribution of these reagents will be through WHO or the National Institutes of Health, or on their instructions. Obviously certain limitations must be imposed on distribution, as it will be impossible to produce sufficient amounts of the reagents to send them out indiscriminately. Reference reagents also have been prepared in the centre [the WHO immunology laboratories at Lausanne], as well as in other cooperating laboratories **under the auspices of the Research Reference Reagents Branch and National Cancer Institute, U.S. National Institutes of Health**, [emphasis added] for many of the prototype human viruses and, to a more limited extent, for simian viruses. Reagents prepared against newly recognized simian viruses will be distributed only to recognized investigators in primate research." [21]

Another WHO report added:

"As additional means of providing advanced training, three meetings on the joint activities of WHO virus reference centres

and national virus laboratories have been held, one in Atlanta in 1967, one in Prague in 1968, and one in Dakar in 1968. At these meetings most of the time was devoted to laboratory bench work. They were designed not only to disseminate information on recent advances and on new techniques but also to foster closer relations between regional reference centres and national laboratories." [23]

"Isn't that nice," Jackie observed, "'closer relations' and germ warfare method and material exchanges between NATO allies and communist bloc countries at the height of the cold war," After another hour of reading, Jackie said "I'm going to bed. Are you coming?"

"Wait till you read this," I replied,

"Haven't you had enough for one day?"

"You know the theory that a simian monkey bite caused an African to get AIDS," I said, Well here's a report by two doctors from San Antonio that suggests that the simian may have first been bitten by a Texan,"

"What?"

I showed her the article and pointed to the section that explained that in 1969, WHO encouraged researchers to use simian monkeys as "animals phylogenetically close to man," [21] They recommended establishing "bio-medical systems that will permit the evaluation of different zoonoses [infections or infestations shared in nature by man and lower animals to] . . . yield information on human disease," [21]

"WHO scientists were concerned about the potential risks of introducing 'a new group or species' of such animals into research since this might be 'potentially dangerous' for both the animals and the investigators," I explained, "They noted that an 'exchange of organisms' might occur from the laboratory into nature affecting both animals and man that, 'in most instances, result in inapparent and latent infections rather than in overt illness,' Here, read this,"

"No, I'm tired, Read it to me in bed,"

We marched off to the bedroom, got settled, and then I began to read, "It says here that 'overt human and non-human illness is possible,' as it apparently occurred with 'Herpesvirus simiae disease, Yaba-like disease, and haemorrhagic disease, the outbreak in Germany associated with African green monkeys, and the spread of a number of bacterial infections,' " [21]

"This is nightmare material," Jackie protested,

"Wait," I continued to read:

"The importance of such occurrences is enhanced by the fact that simians come from diverse geographical areas. A possibility exists, therefore, that new and exotic agents may be transported internationally, introducing an unrecognized clinical syndrome into the animal colonies and perhaps into the human population as well. Thus, while the use of non-human primates in certain

experimental studies is to be commended, disregard for the potential problems would be foolhardy indeed." [21]

"The report goes on to say that despite their concerns, the authors reported working with various governmental agencies as well as commercial firms to obtain 'reference seed virus and specific antisera' for dozens of monkey types and related diseases. With funding from the NIH and methods and materials from the NCI, the doctors continued to grow their simian monkey viruses until the WHO ordained them the 'WHO Collaborating Laboratory on Comparative Medicine: Simian Viruses.' They're located at the Southwest Foundation for Research and Education [currently called the Southwest Foundation for Biomedical Research]."

"Listen to their 'specific aims:'"

- (1) the development of a working repository for simian viruses;
- (2) the provision of a source of reagents such as certified reference seed virus strains and specific antisera;
- (3) the provision of consultation services, including serum survey data, on the existence of antibody to various viruses of human and simian origin in various genera and species of primates;
- (4) the provision of diagnostic services, including the identification and characterization of viruses for primate research workers unable to identify isolates obtained from their primates (this would also include screening for human viruses);
- (5) the provision of information and the organization of exchanges of organisms between primate centres and other health organizations; and
- (6) the training of interested students in virological laboratory procedures associated with primate investigations. [21]

"And here again, they stated they received their 'working stocks' of viruses and antisera from the NIH's Research Reference Reagents Branch as well as from the NCI, and that they were now creating their own new forms of viruses and vaccines."

"Sounds like a 'clearinghouse' for simian viruses," Jackie responded with one eye open. "Just what the world needed. Now can we go to sleep."

"Not yet. Consider the financial payoff. They already acknowledged working with private companies. In the late 1960s and early 1970s they stockpiled everything that might be needed, and undoubtedly lucrative, in the event of a future simian virus outbreak. They clearly acknowledged the Marburg virus outbreak in Europe and Africa as a sign of times to come. It also says they would continue their 'present cooperation with investigators using primates in cancer studies.'

"What's interesting," I continued, "is that they blamed the monkeys for transmitting these newly discovered viruses which they most plausibly isolated, cultured, and then inoculated into the animals. Here's how they closed:"

"Perhaps it should be reemphasized that there is a very practical, important side to this programme. Recent outbreaks of human and simian disease in several centres handling simians indicate that these animals are responsible for the transmission of the etiological agents." [21]

"How treasonous," Jackie chuckled. "The monkeys asked to be jailed so they could later be held responsible for their crimes against humanity. How dare they transmit deadly viruses back to the humans who were infecting them."

I joined in the comic relief. "Yeah. Maybe instead of three monkeys symbolizing denial, it should be three NCI virologists with their eyes, ears, and mouths covered.

"The last thing it says is that:"

"It is highly probable that more such incidents can be expected. The work to be done at the centre will do much to evaluate and elucidate the situation, and the centre may be called upon for assistance." [21]

"That's the best example I think I've ever heard of successful entrepreneurs creating their own niche market," Jackie chided.

Early Cancer Research Under WHO

The next morning after getting Alena, now three, off to day care, Jackie and I reviewed the last of the WHO's viral research reports.

We immediately learned that the WHO's intensified interest in viruses dated from around 1950 with the initiation of their "smallpox eradication programme."

Initially, a number of countries "generously donated smallpox vaccine to the WHO Special Account for Smallpox Eradication," and by 1971, more than 37 million doses had been distributed with Russian contributions outpacing America's by more than two-to-one. [29]

Yet, despite such international investments, the mammoth undertaking, we learned, returned only mixed results since many vaccinated countries experienced repeated outbreaks of deadly smallpox. [25-29]

Besides smallpox, the WHO Chronicle stated the importance of viral infections on cancer as early as 1965. The WHO's Scientific Group on Viruses and Cancer met in Geneva that year to plan a common research agenda. The Group, comprised of international representatives, including three from the United States and one from Russia, cited the need to study viruses since cancer cells maintained altered genetic material. [30,31] Consequently, they recommended attempts be made "to determine the structural alterations in cellular nucleic acids," that is, the basic chemical building blocks of all life. They desired to search for all parts of

the virus genome, the genetic makeup or reproductive blueprint of the viruses, their chemical reaction triggers, or enzymes, or other "virus-associated intracellular substances." They ordered study of the "specific changes in the metabolism" of virus infected cells, and wrote:

"Any genetic structure peculiar to viruses suspected of causing cancer should be identified and mapped out. Immunological methods might prove of value, since virus-transformed cells carry antigenic [that is, foreign chemical] markers. . . . A rust step in such research would be to induce transformation [cancers] in various experimental animals with viruses that commonly infect man. . . ." [30]

"The Group also suggested that, although there is no reason at present to suspect transmission of animal cancer viruses to man, any possible relationship that might exist between bovine [cow] lymphosarcoma [cancer of the lymphatic cells and tissues] or other mammalian leukemias and human leukemia should be explored, both by epidemiological studies and by laboratory research on suspected etiological agents." [31]

"That's exactly what Strecker alleged brought on the AIDS epidemic," I said. Could this research have really created HIV and AIDS-related diseases like lymphomas and sarcomas?

Hot Viruses During the Cold War

It soon became obvious that by the late 1960s, the WHO's viral research program shifted into hyperdrive. [32-35] After reading several papers about their major advances, my attention focused on additional written confirmation of the USPHS's and the NCI's leading role in the WHO's viral and cancer research program. Perhaps not coincidentally, at the exact time the DOD petitioned Congress to fund their AIDS-like virus project, the WHO announced its center for viral research and development was the NCI. [36-39]

By 1968 - ten years into their viral research program - the NCI and WHO reference centers in Copenhagen, Denmark, and Lausanne, Switzerland, had served as authorized technical advisers and suppliers of "prototype virus strains, diagnostic and reference reagents [e.g., antibodies], antigens, and cell cultures" [22] for more than "120 laboratories in 35 different countries." [23]

Within a year of this announcement, this number increased to "592 virus laboratories. . . . [O]nly 137 were outside Europe and North America." [24] Over these twelve months, four of the most active centers, including the CDC and NCI, distributed "2,514 strains of viruses, 1,888 ampoules of antisera mainly for reference purposes, 1,274 ampoules of antigens, and about 100 samples of cell cultures." [22] More than 70,000 individual

reports of virus isolations or related serological tests had been transmitted through the WHO network. [23]

"This sounds like something out of a James Bond novel." Jackie responded. "I expect to read the word SPECTRE any minute now."

Instead, we read that the NIH in Bethesda and the National Communicable Disease Center in Atlanta, the predecessor of the CDC, had made great progress in testing vaccines produced in large quantities in horses.

We soon learned that the horses were actually stabled and tested in Frederick, MD at Fort Detrick, America's premier biological weapons testing center.

-NOTES-

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Chapter 4

The Road to Fort Detrick Runs Through Bethesda

ONCE again, from the bowels of Countway's dusty basement came a wealth of information about Fort Detrick. As the WHO and NCI viral research quietly expanded, a growing wave of world opposition to biological weapons (BW) came crashing down on Detrick's gate.

The scene was set in 1968 as these Army biowarfare labs were operating at full tilt on numerous assignments, including the testing of synthetic viruses designed to attack the very nature of human immunity.

At the same time, medical experts and political leaders from around the world shamed America for its continued BW program and its use of chemical weapons in Vietnam.

As a calculated public relations ploy designed to bolster sagging public opinion and counter threatened congressional funding, Detrick's public relations department announced the Fort's plan to celebrate its silver anniversary. In response, protests erupted on Detrick's perimeter. [1-8]

Detrick's Silver Anniversary

Fort Detrick was the nation's, and likely the world's, "largest and most sophisticated" BW testing center. The facility employed some 300 scientists, including 140 microbiologists, 40 of whom had PhDs, 150 specialists "in other disciplines ranging from plant pathology to mathematical statistics," and between 700 and 1,000 supporting staff. The operation occupied "some 1,230 acres of federally owned land" upon which 450 structures were maintained. It produced annually "some 900,000 mice, 50,000 guinea pigs, 2,500 rabbits. . . and 4,000 monkeys." There was also a large "corral" area for holding larger animals such as horses, cattle, and sheep. The cost of running Detrick's BW research alone was reported as \$21.9 million in 1969. [1-3]

Among the academic festivities planned for Detrick's twenty-fifth anniversary was an international symposium dealing with the "entry and control of foreign nucleic acid" into cells during the process of human and animal immunosuppression. The frank threat of manipulating nature's own genetic blueprint for life, and celebrating its possibilities, brought sharp protests from leading scientists. Despite their harshest warnings, on April 4 and 5, 1969, Detrick played host to the American Institute of Biological Sciences (AIBS) - sponsored event.

The AIBS involvement additionally outraged conscientious objectors.

A boycott ensued that was believed to be unparalleled in the "stormy history of relationships between the military and the scientific community." [4]
Science news reported:

"At least 16 scientists refused to give papers at a Detrick-sponsored symposium on nucleic acids as part of a half-spontaneous, half organized protest against the use of science for destructive military purposes. Some scientists rejected Detrick's invitation shortly after it was received; others accepted the invitation, but then, after receiving letters and calls from their colleagues, decided to withdraw. Four scientists even withdrew after the final program had been printed, thus forcing Detrick to rearrange the program at the last minute."

"Pickets marched outside Detrick's main gate carrying signs that proclaimed "Fort Detrick IS NOT a Respectable Scientific Institution" and "Fort Detrick Scientists are Prostitutes." One sign asked "Want to Get Sick? Consult Your Local Physician at Fort Detrick"; and several signs were decorated with drawings of skulls." [4]

Mark Ptashne, a Harvard graduate researcher, declined on the grounds that he found Detrick's work "highly repellent" and did "not want my name associated with Fort Detrick." Dean Fraser, a professor of microbiology at Indiana University, balked at celebrating research conducted in an effort to develop BW. He wrote in declining his invitation, "It seems at best a little like commemorating the creation of the electric chair and at worst like celebrating the establishment of Dachau." [4]
Even some AIBS officials appealed the event. Dr. John Allen and a group of AIBS board members published a clarification notice in 'Science' citing their principal concerns:

"It is not appropriate nor proper for an organization representing a large segment of the biological community to actively participate in a celebration honoring 25 years of biological and chemical warfare research. . . . It is not proper for AIBS to lend its name and prestige to this celebration indirectly conveying the impression that AIBS actively favors this aspect of Defense Department activity. . . . The essential issue is a moral one. . . ."
[5]

World consensus among physicians and scientists was much the same.

Calling Fort Detrick

Considering that the symposium papers on the "**entry and control of foreign nucleic acid**" might hold important

information, I decided to call the library at Fort Detrick. By this time, I realized the NCI had been the Fort's chief tenant for over two decades. After phoning directory assistance for their number, I soon contacted one of the NCI's chief librarians.

It took her several hours to field my request for the papers generated during the beleaguered symposium. "I'm sorry, I wasn't able to find any publications relating to that conference, but it's possible the library at the Army's Cancer Research Facility may have them. Would you like their number?"

"Sure."

Unfortunately, the Army's Cancer Research Facility librarian reached a similar dead end. She called me back and said, "You know, you might try calling the public relations office to see if they can dig up the information for you."

Within minutes, I was speaking with Mr. Norman M. Covert, the chief public relations officer for the United States Army Garrison at Fort Detrick.

What a great name for a secret military facility's public relations officer, I mused.

I found Mr. Covert exceptionally knowledgeable about the history of The Fort, and very kind as well. He recalled the late 1960s being a period of widespread dissent but could not recall the symposium.

"Protestors held a twenty-four-hour vigil outside the gates for a full year," he lamented. "I documented it in my new book about our fifty-year history. Would you like to receive a copy?"

"Well, sure, but how much is it?"

"Oh, there's no charge. I'll be happy to send you one."

Two days later, 'Cutting Edge' [9] arrived in the mail, and I devoured the eighty-seven page hardcover in a few hours.

Merck: On the "Cutting Edge" of Biological Warfare

According to Covert's version of Detrick's anthology, The Fort celebrated its "Birth of Science" in 1943 for two purposes defined by President Roosevelt and the War Department. They were to "develop defensive mechanisms against biological attack; and they were to develop weapons with which the United States could respond 'in kind' if attacked by an enemy which deployed biological weapons." Covert wrote:

"From the moment of its birth in the highest levels of government, the fledgling biological warfare effort was kept to an inner circle of knowledgeable persons. George W. Merck was a key member of the panel advising President Franklin D. Roosevelt and was charged with putting such an effort together. Merck owned the pharmaceutical firm that still bears his name."

"Merck! If that don't beat all," I wailed.

My surprise was based on the knowledge that the hepatitis B vaccine Strecker alleged infected the American gay community was almost certainly manufactured by Merck's company. To confirm my suspicions, I dug out the New England Journal of Medicine report that I had studied years earlier. The paper reported that, indeed, the homosexual hepatitis B vaccine study had been supported "by a grant from the Department of Virus and Cell Biology of Merck, Sharp and Dohme Research Laboratories, West Point, PA." The "National Heart, Lung, and Blood Institute, of the U.S. Public Health Services's National Institutes of Health" also provided grant money for the project. [10]

Then I recalled another interesting fact from the 'Deadly Innocence' investigation. Robert Gallo's Cell Thmor Biology Department at the NCI, that had been credited for having discovered the AIDS virus in 1984, bore a resemblance to Merck's "Department of Virus and Cell Biology."

I leafed to the page that discussed the Merck vaccine and read:

"The vaccine was prepared in the laboratories of the Department of Virus and Cell Biology Research, Merck Institute for Therapeutic Research, West Point, PA. . . . The vaccine, made from the plasma of HBsAg [hepatitis B surface antigen] carriers. . . was treated. . . . A large number and variety of tests were carried out by the manufacturer on the initial plasma pools, the antigen concentrates, and the vaccine to insure microbial sterility and the absence of extraneous viruses. The vaccine was also tested for live hepatitis A virus (HAV) in marmosets [South and Central American monkeys] and live HBV [hepatitis B virus] in susceptible chimpanzees. The placebo, also prepared in the Merck Laboratories, consisted of alum alone in the vaccine diluent." [10]

So, they produced the experimental and placebo vaccines. They allegedly tested them both for "extraneous viruses." But wait, I thought. It's not clear whether they tested the placebo vaccines. Perhaps there was no need to test the placebo, but could there have been a potential for sabotage?

A Mysterious French Connection

In fact, a few days later, alone again in Countway's dungeon, I discovered a 1983 'Nature' article" that said that France's Institut Pasteur - credited along with Luc Montagnier for having isolated LAV, the first AIDS virus (identical to Robert Gallo's HTLV-III) - was under suspicion for allegedly importing tainted hepatitis B vaccine serum from the United States. The news report said:

"[Their] independent commercial offshoot, Institut Pasteur Production (IPP) . . . was accused of clandestine importation of American blood plasma (automatically suspected of AIDS

contamination) to help with manufacture of hepatitis B vaccine. A chimpanzee was also said to have died in testing the first batch of such vaccine: it was an apparent scandal."

The report noted the IPP was up against:

". . . fierce competition with its American rival, Merck, Sharp and Dohme. Both companies are seeking lucrative contracts in Asia, and particularly in China where IPP had foreseen a market of "dozens of millions of doses of vaccine," an order of magnitude larger than its previous sales. . . ." [11]

With so many millions of doses worth billions of dollars in revenue, I realized, there was certainly potential motive for industrial espionage. The article did not cite, however, the source of the American plasma, an omission possibly due to liability concerns. But it could have been Merck or one of its subsidiaries, I reckoned.

It was certainly plausible that the imported plasma had been as tainted as our domestic blood supply had been until screening procedures began in 1986. If tainted though, I reasoned, it could have just as easily been sabotage - an intentional targeting of a competitor. It would have been easy to hide and hard to trace the source of HIV in contaminated vaccines months or even years after they were administered.

"As for some of Libertion's accusations, the truth now seems a little difficult to establish since French Health officials who earlier were said to have been "furious" about not having been informed by IPP about the use of American plasma now have to accept a Ministry of Health statement that the ministry was, in fact, informed, and had granted authorization from the first date of importation in March 1982. . . ." [11]

That was two years before Gallo announced the discovery of HIV, I reflected.

". . . In this particular chimpanzee, treated with the first lot of vaccine to be based in part on American plasma (3 per cent of the total), there was a small lesion of the liver. Two French and one American expert concluded it was "nonspecific" and the vaccine was marketed with approval. . . . However, there had been "some disagreement" (says Dr. Netter) among the experts about the nature of the lesion. When a kit for detecting human T-cell leukaemia virus (HTLV) - a suspected AIDS agent - arrived from the United States [by way of Dr. Robert Gallo's NCI research lab no doubt], the ministry requested a new test. Marketing was stopped for a while but the [second] test proved negative and sales were resumed." [11]

That meant Montagnier and the French had used Gallo-supplied

anti-bodies for AIDS-like virus testing two years before they announced the discovery of HTLV-III or LA V-the AIDS virus. How could that be? I recalled that Margaret Heckler, Secretary of Health and Human Services, announced in 1984 that they would not have such a test kit available for at least six months. How bizarre, I thought.

The article concluded:

"Libertion is left with one substantial point: that confusion over the origin of IPP's plasma, and an early lack of information about the chimpanzee, which resulted in the facts being "discovered" by journalists, indicate a lack of "clarity" in IPP's affairs; and that it would have been much better for the company if the confusion had not been allowed to arise. IPP might heartily agree." [11]

In any case, I considered, the fact that the press discovered the confusion meant they were tipped off, and who stood the best chance of capitalizing on IPP's negative publicity more than their foremost competitor - Merck, Sharp and Dohme.

More Merck Nostalgia

According to Covert's 'Cutting Edge,' the United States biowarfare effort began "in the fall of 1941 when Secretary of War Henry Stimson wrote to Dr. Frank B. Jewett, then president of the National Academy of Sciences (NAS):

"Because of the dangers that might confront this country from potential enemies employing what may be broadly described as biological warfare, it seems advisable that investigations be initiated to survey the present situation and the future possibilities. I am therefore, asking if you will undertake the appointment of an appropriate committee to survey all phases of this matter. Your organization already has before it a request from The Surgeon General for the appointment of a committee by the Division of Medical Sciences of the National Research Council to examine one phase of the matter. I trust that appropriate integration of these efforts can be arranged." [9]

I noted the reference to the NAS's National Research Council (NAS-NRC), recalling its part in the DOD appropriations request for funding AIDS-like virus research and development (see fig. 1.1).

A year later, Secretary of War Stimson added:

"The value of biological warfare will be a debatable question until it has been clearly proven or disproven by experiences. The wide assumption is that any method which appears to offer advantages to a nation at war will be vigorously employed by that

nation. There is but one logical course to pursue, namely, to study the possibilities of such warfare from every angle, make every preparation for reducing its effectiveness, and thereby reduce the likelihood of its use." [9]

A couple months after this report to President Roosevelt, Stimson was authorized to develop a civilian agency to "take the lead on all aspects of biological warfare." It was assigned to the Federal Security Agency (FSA) to obscure its existence, and George Merck was named director of the new War Research Service (WRS). [9]

As a result of this covert effort, according to Detrick's public relations director, "recombinant DNA research techniques" were being employed "through which certain organisms. . . [were] cloned to produce weaker, stronger or mutations of the original." These experiments, Covert wrote, became the "legacies of Fort Detrick, but it was not done in the Fort Detrick laboratories." In other words, I thought, the road to Fort Detrick leads through Bethesda. If Covert printed the truth, the AIDS-like virus prototypes were developed outside the Fort and brought in for testing. The only other regional facilities with the means and organisms needed to produce immune-system-destroying viruses, in 1969-1970, was right down the road in Bethesda at the NCI's labs, [12] or in West Point, Pennsylvania at MSD's. [10]

The NAS on CBW

On October 13, 1969, following the onslaught of opposition to Fort Detrick's silver anniversary festivities and the international CBW race in general, the NAS responded - not by disclosing its clandestine efforts to support the development and testing of BW and antidotes, but by addressing the controversy at a "Symposium on Chemical and Biological Warfare." [13] The meeting was chaired by Dr. Matthew S. Meselson, Director of the Biological Laboratories, Harvard University, and included three presentations from American CBW notables.

Attorney George Bunn, a former General Counsel for the United States Arms Control and Disarmament Agency presented a session dealing with "Gas and Germ Warfare: International Legal History and Present Status," during which he heralded the "success" of "the Geneva Protocol of 1925 which prohibits the use of gasses and bacteriological methods of warfare. More than 80 countries have ratified this treaty. . . . Many in recent years. The United States, the one country most responsible for the drafting of the treaty, has still not become a party to it," he noted. [13]

The chairman, commenting on Bunn's presentation, wrote:

"This winter a group of 21 nonaligned states at the United National General Assembly introduced a resolution declaring as

contrary to international law as embodied in the Geneva Protocol the use in war of all toxic chemical agents directed at men, animals, or plants. Its sponsors made clear that the resolution applied to irritant gases and anti-plant chemicals such as those used by the United States in Vietnam. Just this month, the resolution was passed by a vote of 80 to 3, with only Portugal, Australia, and the United States in opposition." [13]

Next, Han Swyter, formerly with the DOD, addressed the NAS assembly with the "Political Considerations and Analysis of Military Requirements for Chemical and Biological Weapons." He commented:

"We are talking about a dollar magnitude of only hundreds of millions of dollars annually. This is insignificant in an \$80 billion Defense budget. On the other hand, these funds could instead be spent on other scientific or medical research, on welfare, or on housing. . . ."

The entire chemical and biological warfare research budget for 1969, Covert reported, was \$300 million. Research for herbicides, such as the ones used in Vietnam that were "designed to kill food crops or strip trees of foliage to deprive enemy forces of ground cover," was granted \$5 million. [9] I found it interesting that twice this amount - \$10 million - was requested and received by DOD for developing an AIDS-like virus that same year. [14]

After reading this, I reflected on Covert's admission in 'Cutting Edge' that despite preparations for President Nixon to ratify the 1925 Geneva Accord, "Nixon assured Fort Detrick its research would continue."

Lt. Col. Lucien Winegar, Covert wrote, said it would "be fair to assume" that the Frederick, MD labs:

". . . would continue to work with dangerous organisms used in offensive BW since any defense required knowledge of those agents. Continuation of the defensive research program was authorized in the biological warfare convention." [9]

The "Grisly Business" of CBW

Within months of Winegar's announcement, Swyter said before the NAS:

"Chemical and biological war is grisly business. I am going to approach it unemotionally, much as an economist analyzes the need for mythical widgets, rather than like a Dr. Strangelove, gleefully plotting the destruction of millions by plague or anthrax. My general approach - that is, identifying objectives, breaking the problem into smaller manageable parts, and examine

each part in terms of objectives - is being used at the Pentagon. **Secretary Laird has a group, known as his Systems Analysis Office, which examines the need for each kind of military capability** much as I will examine for you the need for chemical and biological capability. Unemotional analysis of the need for war - fighting capability goes on every day." [emphasis added]

"The first kind of capability I will analyze is lethal biologicals. . . . These are population-killing weapons. In situations in which our national objective would be to kill other countries' populations, lethal biologicals could be used."

"If we want to kill population, we can now do that with our strategic nuclear weapons - our B-52's, Minutemen, and Polaris. We keep the nuclear capability whether or not we have a lethal biological capability. A lethal biological capability would be in addition to our nuclear capability rather than a substitute for it."

"Therefore, we do not need a lethal biological capability." [13]

Failing to describe the benefits of biological versus nuclear weapons for population control, the former Defense Department analyst rhetorically concluded that since a ". . . crude biological capability is economically available to very many nations."

". . . a decision to have capability, to have an option for that rare situation, requires weighing the uncertainties of nonproliferation with the value of human life, perhaps of tens of thousands of Americans. If we decide today that we would be willing to sacrifice our soldiers in the situation I described, we do not need a capability. However, if we want the option to decide later, perhaps we need an incapacitating [as opposed to lethal] biological capability." [13]

Ivan L. Bennett, Jr., a former Deputy Director of the United States Office of Science and Technology, was the last one to address the NAS general session. The topic of his presentation was "The Significance of Chemical and Biological Warfare for the People." He began by defining biological weapons as "organisms, whatever their nature, or infective material derived from them which are intended to cause disease or death in man, animals, or plants, and which depend for their effects on their ability to multiply in the person, animal or plant attacked." [13] "Both chemical and biological agents lend themselves to covert use in sabotage," he noted, against which it would be exceedingly difficult to develop any really effective defense.

"As one pursues the possibilities of such covert uses, one discovers that the scenarios resemble that in which the components of a nuclear weapon are smuggled into New York City and assembled in the basement of the Empire State Building.

In other words, once the possibility is recognized to exist, about all that one can do is worry about it." [13]

"General military philosophy according to Bennett:

says that our national security demands that we "keep all options open" no matter how limited the need for or the utility of a given option may be. Similarly, arguments of cost-effectiveness or maintaining an option because it is "cheap" should be countered by asking, "Relative to what?" Indeed, insofar as lethal chemical and biological weapons are concerned, all arguments for possessing them finally come down to the basic assertion that if the Soviets or some other potential aggressor possesses them, then we must have them too. . . . In essence, then, the real military effectiveness of lethal CBW, in terms of inflicting casualties, will accrue to the force that initiates use against an unwarmed enemy. . ." [13]

Kissinger and Nixon Respond

The following month, as a calculated diplomatic measure, Dr. Henry Kissinger, Nixon's National Security Council director and foreign policy chief, advised the president to sign the Geneva accord. History proved the act was a public relations ploy intended to silence American BW critics, bolster sagging public opinion regarding American military efforts, and respond to threatened congressional funding for additional BW research. President Nixon-pressured on the one hand to respond to growing public criticism of America's involvement in Vietnam, and on the other by DOD militarists citing their unwillingness to "sacrifice our soldiers" should Russia deploy their biological weapons - renounced the "first use of lethal chemical weapons. . . incapacitating chemical[s], . . . and biological weapons" of any kind in support of the objectives of the Geneva Protocol of 1925. Covert wrote:

"President Nixon, scoring a major international diplomatic victory on November 25, 1969, signed an executive order outlawing offensive biological research in the United States. . . . Nixon said the Nation would destroy its stockpile of bacteriological weapons and limit its research to defensive measures." [9]

"The President articulated his BW concerns this way:

" "Biological weapons have massive, unpredictable, and potentially uncontrollable consequences. They may produce global epidemics and impair the health of future generations. I have therefore decided that:
-The U.S. shall renounce the use of lethal biological agents and

weapons, and all other methods of biological warfare.
-The U.S. will confine its biological research to defensive measures such as immunization and safety measures, and
-The Department of Defense has been asked to make recommendations as to the disposal of existing stocks of bacteriological weapons." " [13,15]

Nixon's recommendation to Congress went further than the position of many other countries that had earlier ratified the protocol in suggesting that "bacteriological weapons will never be used, whatever other countries may do." [15]
In an accompanying document, Nixon's Secretary of State William P. Rogers made it clear that "the United States Government considers that toxins, however manufactured, will be considered as biological weapons and not chemical weapons." In this and other ways, Nature observed, "the position of the United States on chemical and biological weapons" had been "transformed within the short space of a year." (see fig. 4.1)

The Ruse

By November 1970, a year after Nixon ratified the Geneva Protocol, nothing had changed except the public's perception of CBW risk. [16] Rather than receive the promised annual cut in biological warfare research funding, the DOD's BW budget increased from \$21.9 to \$23.2 million. The stockpiled bioweapons Nixon pledged would be rapidly destroyed remained intact in Pine Bluff, Arkansas, and the announced transition of Fort Detrick from a BW testing facility to a solely defensive NIH run health research lab had not occurred.

'Nature' carefully followed the events from Washington, Bethesda, and Fort Detrick, and reported:

"The general absence of forward movement in the direction pointed by President Nixon is ascribed by some to skillful delaying tactics by the Army, which is held to be determined not to drop its biological weapons until its hand is forced. . . . Nixon seems not to have been properly briefed on the extent of the likely opposition [to the cuts]." [16]

I later learned that, indeed, Nixon may not have been properly advised, but the ruse was by no means an accident.

The BPL Exercise

"Would this library have the Rockefeller Commission's report on CIA Wrongdoing?" I asked Mike, one of several Countway librarians stationed at the on-line services center. I was interested in following up a hunch that the CIA, reportedly involved in LSD

and other drug experiments, might have also been involved in viral research. A Canadian colleague had mentioned the Rockefeller report might be available through a local library. [17,18]

"Let me check," Mike replied; then he quickly keyed in a few words on his PC. "That's over in the BPL, The Boston Public Library. They have a copy available in the government documents office."

"All right. Thanks."

That afternoon I visited the BPL's government documents office and asked one of the librarians for assistance in tracking down the CIA wrong-doing report.

"That'll be a few minutes," the librarian responded after I handed him my completed request form. "Have a seat and we'll bring it right to you."

I made myself comfortable in a seat adjacent a functioning PC. The screen displayed a search menu that beckoned my curiosity. Just for the hell of it I thought, I typed the words, "biological weapons" and "CIA" in the subject field. Then I pressed the Enter key. To my surprise, the screen filled with data-references regarding the CIA and biological weapons.

Somewhat astonished, I suddenly realized how easy it was to access information I assumed would be classified. I selected and then output the information to the printer.

The hardcopy included Soviet, Caribbean, and Cuban International Affairs references. "Belitskiy on How, Where AIDS Virus Originated," read one title. It documented a Moscow World Service broadcast in English. Another, "Commentary Accuses U.S. of Developing AIDS Virus," was broadcast by the Havana International Service. A third in the Caribbean press was tagged "German Claims AIDS Created by Pentagon." [19-21]

Moments later, the BPL librarian returned with the Rockefeller Commission report about the CIA. Before he left, I asked how I might locate the documents I had just learned about. He told me they were on microfilm two floors up. Within a couple of hours, I had retrieved and read them all.

Apparently, several researchers throughout the world - Dr. John Seale from London, Dr. Maneul Servin in Mexico, and Dr. Jacobo Segal from Berlin - had alleged what Strecker had. The Russian report even cited a West German company named OTRAG for having conducted green monkey virus experiments in Zaire that had allegedly led to the development of "a mutant virus that would be a human killer." [19]

I filed these documents neatly away for later reference.

The Rockefeller Commission Report on CIA Wrongdoing

In the spring of 1970, after Congress granted DOD funds for the development of AIDS-like viruses, the CIA illegally "forwarded

two checks totaling \$33,655.68 to the White House. . . ." This money, the report said, was used to help fund Richard Nixon's upcoming reelection campaign, and was allegedly spent for direct-mail expenses. [18]

So as Nixon administration officials were stalling the announced biological weapons cutback, the president was being rewarded by America's espionage establishment, I realized, though the two may not have been related.

In April 1970, E. Howard Hunt, most famous for orchestrating the Watergate break - in which led to President Nixon's resignation, allegedly "retired from the CIA after having served in it for over twenty years."

With the help of the CIA's External Employment Affairs Branch, The Rockefeller Commission reported that Hunt then obtained a job with Robert R. Mullen and Company, a Washington, D.C., public relations firm, a CIA "front". [18]

"The Mullen Company itself had for years cooperated with the Agency by providing cover abroad for Agency officers, carrying them as ostensible employees of its offices overseas. Hunt, while employed by Mullen, orchestrated and led the [Dr. Lewis] Fielding and Watergate break-ins and participated in other questionable activities. . . ."

"During 1971, the CIA, at the request of members of the White House staff, provided alias documents and disguise materials, a tape recorder, camera, film and film processing to E. Howard Hunt. . . ."

"Some of these materials were used by Hunt and [G. Gordon] Liddy in preparing for and carrying out the entry into the office of Dr. Fielding, Daniel Ellsberg's psychiatrist. In particular, the CIA at Hunt's request developed pictures taken by him of that office in the course of his reconnaissance for the break-in." [18]

It took till 1974 before a stunned public learned that at least four CIA operatives had engineered "Watergate" allegedly to discredit Senator Edward (Ted) Kennedy who was viewed as Nixon's only formidable Democratic rival.

Nostalgic Foreshadowing

In retrospect, Ted Kennedy's brother Bobby had been considered a "shoe-in" for defeating Nixon in the 1968 presidential election. He was assassinated not long after Dr. Martin Luther King was shot and killed. Besides embodying the Kennedy mystique, Bobby was gaining in the polls for being sharply critical of America's increasingly unpopular involvement in Vietnam. In particular, both John and Bobby Kennedy had found the use of chemical and biological weapons abhorrent. [18,22]

" "These horrors, Bobby said, were the responsibility of all American citizens, not just the administration's policymakers. "It is we," he said, "who live in abundance and send our young men out to die. It is our chemicals that scorch the children and our bombs that level the villages. We are all participants." " [22]

Unlike his brothers, Ted Kennedy's position on CBW and related "defense" research was one of moderate tolerance. He alleged that "society must give its informed consent to technological innovation." On the other hand, he argued that the "prospects of significant medical advances" surely outweigh the "hazards of saying no" to such exploration. "The particular field of DNA-splicing research," he commented not long after Bobby's assassination is "far from being an idle scientific toy." [23] Ted Kennedy, I also learned that afternoon in the government documents library, had been appointed to serve as vice president of NATO during the Nixon and Ford administrations. [24]

Onward and Upward

With Jack and Bobby out of the way, the King-led civil rights movement in disarray, and Ted on board and politically neutralized, the manufacturers of war and biological weapons got on with their business.

Researchers at the NCI were now hard at work filling the DOD's order for AIDS-like viruses. Because of the adverse political climate, and Nixon's superficial endorsement of the Geneva accord, funding needed to be secured covertly through an "amendment to the appropriation bill for the Departments of Labor and of Health, Education and Welfare." [25]

This was how it came to pass that Fort Detrick - the world's largest and most active biological weapons facility - was virtually overtaken by the NIH and NCI for allegedly "peaceful uses." The cost of the conversion (approved by the U.S. Senate) was \$15 million. [25]

"The proposals by the National Institutes of Health were judged the most meritorious and seem to have had the agreement in principle of Mr. Robert Finch, previous Secretary of the Department of Health, Education and Welfare, and Dr. Lee Dubridge, former science adviser to the President. . . ." [25]

All of Fort Detrick's staff were, as Nature reported, "looking forward with great expectation to taking on the health research projects the National Institutes of Health would assign the laboratories. . . ." Since many scientists at Fort Detrick were "in any case involved in basic research and some are already cooperating in projects with the National Cancer Institute, there would not be much of a shift." [25]

Not surprisingly then, among the projects heralded for immediate action at the new NIH-run facility, was "research on hazardous viruses." The NCI, it was reported, would "use Fort Detrick for the containment and large scale production of suspected viral tumor agents." [25]

The following year, 1971, in the heat of his reelection campaign, Nixon launched the "war on cancer" and soon thereafter, hailed Dr. Robert Gallo, the head of the NIH and NCI's Section on Cellular Control Mechanisms, for having discovered leukemia's alleged cause - an "RNA-retrovirus." It was then announced that the NCI would have a vaccine for cancer available by 1976. [26] This knowledge brought me back to Countway for the final hour of my day. In a mad rush to find anything Gallo had published, my search led me to a fascinating and disturbing discovery: As this history-making announcement was being made, Gallo was drafting a review article describing his group's methods of injecting ribonucleic acids from one strain of virus into other strains in an effort to create mutants that functioned just like the AIDS virus. In essence, they developed AIDS-like viruses by the early 1970s. Their stated purpose was to alter a host's genetic immunity allegedly to control cancer. Experiments were designed to produce an assortment of lymphocytic leukemias, sarcomas, and opportunistic infections in chickens, mice, rats, sheep, cats, monkeys, and humans. [27]

Thirteen years later, President Reagan's Secretary of Health and Human Services, Margaret Heckler, hailed Dr. Gallo for having "discovered the virus which causes AIDS." [28]

The train ride home that night was one I will always remember. It's amazing what you can dig up in libraries, I thought as I solemnly contemplated the lessons of the day.

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Fig 4.1 - President Nixon Visits Fort Detrick in 1972:



President Richard M. Nixon greets members of the press outside former Fort Detrick Headquarters in November 1972. Nixon, under advisement of Henry Kissinger, established Frederick Cancer Research and Development Center in former Army laboratory buildings. This change he heralded by saying the U.S. was "beating its swords into plowshares." Source: Covert NM. 'Cutting Edge: A history of Fort Detrick, Maryland 1943-1993.' U.S. Army Garrison Headquarters, Fort Detrick, Maryland 21702-5000, p. 83.

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- [1] Washington Correspondent. Biological warfare: Detrick left hanging. *Nature* 1971;229:5279:8.
- [2] Washington Correspondent. Biological warfare: Relief of Fort Detrick. *Nature* November 28, 1970;228:803.
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- [5] Allen JM, Emerson R, Grant P. Schneiderman HA and Siekevitz P. *Science*. 1968;160:834:1287-8.
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[7] Anonymous. Control of microbiological warfare. *The Lancet* 1968;2;564:391.

[8] World Health Organization. Biomedical research: WHO's commitments examined. *WHO Chronicle* 1975;29:417-422.

[9] Covert NM. Cutting Edge: A history of Fort Detrick, Maryland 1943-1993. Fort Detrick, MD: Headquarters, U.S. Army Garrison, Public Affairs Office, 1993. [For copies call 301-619-2018]

[10] Szmuness W, Stevens CE, Harley EJ, Zang EA and Oleszko WR et al. Hepatitis B vaccine: Demonstration of efficacy in a controlled clinical trial in a high-risk population in the United States. *New England Journal of Medicine* 1980;303;15:833-841.

[11] Walgate R. Hepatitis B vaccine: Pasteur Institute in AIDS fracas. *Nature* 1983;304:104.

[12] This knowledge also made me wonder whether Bethesda maintained any secret, highest biosafety level 4, BSL4, labs. Later I learned that, BSL 4 facilities were only available at Fort Detrick and at the CDC, they were not needed to produce or study the AIDS virus. This was confirmed during a telephone call to Bethesda's NCI AIDS research labs. The technician I spoke with there responded to my question, "Yes, we are handling the [AIDS] virus in level 3 labs as are numerous study groups around the country." Despite the CDC labs ability to handle the AIDS-like viruses however, a review of the research literature from that period shows they were not active in such efforts. Only the NCI was conducting this kind of research and only in the Cell Tumor Biology Department at the NCI which was headed by Dr. Robert Gallo.

[13] National Academy of Sciences. Symposium on chemical and biological warfare. *Proc. N.A.S.* 1970;65:250-279.

[14] Department of Defense Appropriations For 1970: Hearings Before A Subcommittee of the Committee on Appropriations House of Representatives. Ninety-first Congress, First Session. H.B. 15090, Part 5, Research, Development, Test and Evaluation, Dept. of the Army. U.S. Government Printing Office, Washington, D.C., 1969.

[15] Staff writer. CBW: Geneva Protocol at last. *Nature* 1970;227;261:884.

[16] Washington Correspondent. Gas and germ warfare renounced but lingers on. *Nature* 1970 228;273:707-8.

[17] My hunch that the CIA might have been involved in viral research was based on my association with a Canadian colleague who relayed the story of Dr. Ewen Cameron. Cameron, the Chief of Psychiatry at McGill University's Allan Memorial Institute in Montreal, conducted LSD experiments for the CIA during a project code named MKULTRA. Victims of Cameron's brainwashing experiments were paid \$7 million in settlements in a case which never went to court and was hushed up in the U.S. See: Bindman S. Ottawa has paid \$7 million to brainwashing victims. *Montreal Gazette*, Wed. Jan. 19, 1994. p. B1.

- [18] The Rockefeller Commission. Report to the President by the Commission on CIA Activities Within the United States. Vice President Nelson A Rockefeller, Chairman. (Co-commissioners included Ronald Reagan). New York: The Rockefeller Foundation. 1975.
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- [20] Havana International Service in Spanish. German Claims AIDS Virus Created by Pentagon. FBIS-LAT 91-017. January 25, 1991. Caribbean, Cuba. Text discusses Dr. Jacobo Segal's allegations. Document PA 2401213091-0000 GMT 24, January 1991.
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- [24] Brumter C. The North Atlantic Assembly. Dordrecht: Martinus Lijhoff Publishers, 1986, p. 215.
- [25] Washington Correspondent. Relief of Fort Detrick. Nature 1970;228:803.
- [26] Goldman BA and Chappelle M. Is HIV=AIDS wrong? In These Times. August 5-18, 1992, pp. 8-10.
- [27] Gallo R. RNA-dependent DNA polymerase in viruses and cells: Views on the current state. Blood 1972;39;1:117-137.
- [28] Shilts R. And the Band Played On: Politics, People and the AIDS Epidemic. New York: Penguin Books, 1987, pp. 450-453.

Chapter 5

The Emperor's New Virus

"You discovered WHAT!?" Jackie shrieked.

"I found out that Robert Gallo may have created the AIDS virus about a decade before he allegedly discovered it."

"Come on."

"Well, I'll know more tomorrow. I'm going back to the dungeon to search his early work."

"You think there's a paper trail? But why would he have published something so incriminating?"

"Because he couldn't have possibly predicted that his creations might have caused an epidemic a decade later. Besides, Randy Shilts characterized Gallo as having a huge ego in *And The Band Played On*, and those types like to see their names in print."

I had quickly read Shilts's highly regarded work about two years earlier. Though I skimmed through much of it, my most vivid memory was that Gallo erected barriers for colleagues racing against time in search of the deadly AIDS virus.

"You know the old saying 'publish or perish.' Today I discovered that Gallo's lab at the NCI put AIDS-like viruses together by the mid-1970s. They proudly published it."

"Really?"

"I might be wrong, but my intuition is telling me to thoroughly check it out; especially now that I know that the NCI, and most likely Gallo's lab, was the principal beneficiary of the \$10 million DOD AIDS-like virus contract?"

"How do you know that?"

"By putting the pieces together," I replied. "The NCI was the WHO's chief virus distributor and they took over Fort Detrick. And Gallo was their top retrovirologist, that is, immune-system-destroying germ expert. Anyway, I'll find out more in the morning. I'm leaving for Boston again early."

That night I couldn't sleep. Questions darted through my mind at lightening speed: Had WHO officials known that their viral "reagents" and laboratory instructions were being used by biological weapons developers? How could they not have? Immune system destroying "slow" cancer viruses were the rage back then. Were WHO officials connected to NAS-NRC members who worked for the DOD? Was Gallo a member of the NAS-NRC, and if so, was he directly involved in their negotiations with the DOD? Had he participated in the controversial Fort Detrick symposium on "entry and control of foreign nucleic acid?" Could he have been injecting RNA into cells to create cancers and analyzing white blood cell control mechanisms as early as the 1960s? This would have drawn DOD attention to his work for potential application in BW research. It struck me odd that soon after the WHO published its report on chemical and biological warfare, the WHO Chronicle ceased

publishing its "Current Research Projects" column that had appeared almost monthly until 1969. Had the military contractors hushed the WHO Chronicle up? Had the CIA - the counterintelligence arm of the Defense Department - protested the practice of giving CBW secrets away?

"I can't sleep," I said to Jackie who was dozing soundly.

"I'm getting up to read."

Gallo Sounded Dreadful in "The Band"

Driven to satisfy my wakeful curiosity Gallo, I walked to the den, flicked on the reading lamp, and thumbed to the index of 'And The Band Played On.' I then settled back into the recliner and began to read the sections Shilts had written about him.

Robert Gallo, I immediately learned, was the son of a hard-working president of a Connecticut metal company. His mother, Shilts simply described as charismatic, extroverted, and clannish. [3]

In 1949, at the age of thirteen, young Robert suffered a "turning point" in his life. His younger sister struggled unsuccessfully to fight leukemia. While she was at the hospital, Gallo met the famous Harvard University cancer expert, Sydney Faber, and other researchers who worked to save his sister from death. This experience sparked Gallo's desire to become a research biologist. [3]

An uncle who taught zoology at the University of Connecticut encouraged young Robert to study at a local Catholic hospital with a grossly cynical research pathologist. Here, as a teen, Gallo performed numerous autopsies. [3]

Later, above his mother's garage, while attending Providence College, he slew scores of mice and studied diligently. [3]

He graduated from Jefferson Medical College in 1963 and then went on to a two-year postdoctoral residency program at the University of Chicago. Next he became a clinical associate in the Medical Branch of the NIH's National Cancer Institute. Here, assigned to work in the children's leukemia ward at the NIH Hospital, he swore he would "never work with patients again." [3]

Later he was appointed to head the NCI's Cellular Control Mechanisms Section of the Human Tumor Cell Biology Branch, and then in 1972, he became the Chief of Lab Tumor Cell Biology at the NCI.

From 1966 to 1970 Gallo earned fame investigating the theory that viruses played a role in leukemia and other forms of cancer. His efforts examined the role of retroviruses and focused on the unique enzyme reverse transcriptase - the chemical that retroviruses used to reproduce themselves in victim cells. Identifying reverse transcriptase aided scientists in detecting retrovirus infections, and represented a significant advance. Yet, few scientists appeared particularly impressed by Gallo's work.

At that time, retroviruses were seen to infect chickens, mice, and cats, but not humans. [4]

Following his discovery of interleukin-II, a natural substance that kept cultured T-cells alive and multiplying, Gallo's "career advanced smoothly-until the false alarm of 1976. It appeared that he had discovered a new virus, and proudly, Gallo announced it to the world. When it turned out that an animal virus had contaminated his cell line, and there was no new virus, Gallo's reputation plummeted." [4]

"For all his accolades," Shilts recorded, "Bob Gallo remained a controversial figure in science." Critics saw him as pompous and arrogant. In scientific politics, "he could be ruthless" and "not always reliable." Gallo himself recognized this criticism reflected "the shadowy side of his character." In his mind however, this pride and arrogance, was required "from the few brave scientists who challenged nature to yield its secrets." [4]

Among his most valuable contributions to the AIDS research effort, Shilts acknowledged, was Gallo's cell culturing and virus typing techniques.

". . . By easily being able to grow lymphocytes, Gallo had already overcome a formidable research barrier. Some viruses eluded decent study simply because scientists couldn't figure out how to propagate their host cells." [5]

"Experiments to detect antibodies [blood markers that are used to indicate exposure to a foreign substance or an active infection] to the Human T-cell Leukemia virus, HTLV, were performed easily with reagents sent from Dr. Bob Gallo's lab. . ." [6]

What troubled me after reading these sections was the realization that he had the cell lines to culture the AIDS virus and the antibodies to detect it **before** anyone in the world knew what it was.

My selected review of 'The Band' quickly drew my attention to another interesting oddity. Gallo, credited with having identified HTLV-the first isolated retrovirus known to cause leukemia in humans, in 1980, had apparently shown his retrovirus was linked to a Japanese outbreak of leukemia. Apparently, Gallo had first discovered this unique retrovirus; then "searched worldwide for a disease that it might cause." [7]

"That's kind of like playing pin the donkey on the tail," I muttered to myself. "A very unusual approach to medical science."

Allegedly by chance, Gallo stumbled upon Japanese researchers who were searching for T-cell leukemia's viral culprit.

Identifying HTLV, forged a major scientific breakthrough in virology. It also disturbed scientists who recognized that such a killer, due to its long incubation period, could spread widely before it caused disease or was even suspected. [7] Something which Gallo was undoubtedly aware with the NCI's charter

membership in the WHO "lentivirus" or "slow" virus research network.

Still, scientists remained doubtful about the importance of Gallo's work and the future of retrovirus research altogether. Many stuck to the belief that such germs preyed mainly upon chickens, pigs, and cats. [7]

So I suspected Gallo's early work probably involved chickens, pigs, and cats. That's interesting, I thought as I remembered reading in Shilts's anthology that AIDS patients suffered complications very similar to cats infected with feline leukemia virus:

"Both feline leukemia and this new gay disease were marked by a trail of opportunistic infections that seemed to take advantage of an immune system weakened by a primary infection. In cats, the infection was a leukemia virus that knocked out the cats' immune systems and left them open to a number of cancers. Clearly, some similar virus was doing the same thing to these homosexual men, and they were getting cancer too. Secondly, feline leukemia has a long incubation period; this new disease must have long latency too, which is the only way it was killing people in three cities on both coasts before anybody even knew it existed." [7]

Dr. Don Francis, one of the CDC's chief virologists, Shilts noted, quickly realized this association. Next, he examined the unique affinity the mystery disease had to gays and intravenous drug users, and how similar this was to the distribution of hepatitis B cases. He rapidly concluded, "Combine these two diseases - feline leukemia and hepatitis - and you have the immune deficiency." [8]

Slow Start Against a "Hot" New Virus

"More than a year into the epidemic," Shilts reported, "the National Institutes of Health had no coordinated AIDS plan. Everything was done on the basis of temporary assignments. . . . At Bob Gallo's lab at the NCI's Division of Tumor Cell Biology," things could have been different, but they were much the same. Only "about 10 percent of the staff effort went into poking around the devastated lymphocytes of AIDS patients." This, despite the availability of generous NIH funding. [9]

Even more suspicious was the fact that nearly a year after the NCI acknowledged the need to channel its resources to fight the oncoming epidemic, the institute withheld its request for funding proposals, and failed to free available funds for AIDS researchers outside Bethesda. [9]

With all the financial resources at its disposal, and the earnest need, why had they held up everyone's search for the AIDS virus?

Furthermore, Shilts wrote that by the end of 1982, "Gallo had had

it up to here with this goddamn disease." [9]

But that was only about eighteen months after the CDC announced there may be an epidemic brewing. I recalled that it was in June 1981 that the CDC reported in 'Morbidity and Mortality Weekly Report' (MMWR) the first cases of what would soon be called GRID - Gay-Related Immune Deficiency disease - the first acronym given AIDS.

It also struck me as odd that Gallo suspected a retrovirus - his career's passion - and then he decided to quit. Shilts wrote that "AIDS had always created some discomfort for Gallo, who hailed from traditional Italian - Catholic stock in New Jersey. There was all this dirty talk of 1,100 partners, fist-fucking, and other exotic sexuality; frankly, Gallo found it embarrassing to talk about." [10]

Again, my mind flashed back to Strecker's hypothesis and then questioned - If the NCI began taking over Fort Detrick in 1970 for the expressed purpose of developing defenses against retrovirus attacks and immune deficiency epidemics, then why did they not respond to this suspected retrovirus crisis over a decade later? Was it because the disease was principally striking Africans and homosexuals?

Brilliance, Treachery, or Both

Between 1978 and 1983, Gallo's lab continued to pay little attention to AIDS at the "lethargic NCI." In those days, the NCI's chief retrovirologist allegedly perceived the cause to be more frustrating and distracting than legitimate. [11]

During this period of AIDS research, Gallo's behavior appeared at best erratic and at worst contemptuous. Shilts recorded a series of suspicious interactions in which Gallo all but sabotaged international research efforts to isolate the AIDS retrovirus.

One episode involved Dr. Max Essex, a Harvard researcher who had flown in to Atlanta to discuss with Gallo the results of a test he conducted on behalf of the CDC. The CDC had sent a cell line teeming with viruses to Essex to determine if HTLV-I or HTLV-II - the viruses Gallo's lab initially discovered and then reported as AIDS suspects - was involved. To find out, Essex used "monoclonal antibodies" that had come from samples Gallo had previously supplied. But when Gallo learned the group was still using his materials, he blew up.

"How can you collaborate with me and you're doing stuff behind my back?" Gallo exploded. "If you're using my materials on anything, I need to know about it in advance. You need my approval."

Gallo spent the better part of an hour berating Essex and embarrassing CDC doctors. "This was the ugly side of the National Cancer Institute that the CDC researchers sometimes talked to each other about," Shilts wrote.

The NCI appeared to be "a repository for researchers concerned

with little more than personal glory." Gallo's outburst confirmed the "darkest suspicions about the NCI." [12]

Another bizarre tale involved Dr. V. S. Kalyanaraman. Kaly, as he was called, had been recruited by Dr. Don Francis at the CDC to develop a "top-rate retrovirus lab" in late 1983. Kaly had gained fame for his HTLV-II discovery while working under Gallo.

"When cajoling did not persuade Kaly to stay in Bethesda, Gallo resorted to threats: He would not let his researcher take any reagents to any retrovirus from his NCI lab to the CDC. He'd have to culture his own viruses and anti-bodies, Gallo said. Meanwhile, Don Francis heard in early August that Gallo had asked top officials at the National Cancer Institute to stop the CDC from hiring the younger researcher. . . . [When] Gallo knew these efforts would not succeed. . . he phoned Don Francis directly."

Gallo said there was no need for two government agencies to replicate retrovirus research efforts. When this approach failed, Gallo warned, "There's no way we will collaborate with you." He saw "no evidence of CDC goodwill" toward the NCI.

Allegedly, for that reason, he withheld experimental reagents including the antibodies needed to identify AIDS-like viruses.[13]

Later, Gallo voiced his concern to colleagues that the CDC was conspiring to determine the cause of AIDS and then "run without me," fearing he would get no credit.

At various times, Gallo warned Francis not to work with other researchers, especially the French. "Don't form tertiary relationships," Francis was told. "Keep me in a prime relationship with AIDS and cherish the goodwill." [13]

Shilts also reported that Gallo's collaboration with Luc Montagnier was altogether shameless. When Montagnier had allegedly discovered what later turned out to be the AIDS virus, he asked Gallo to supply the antibody needed to examine the retrovirus's dissimilarity to Gallo's HTLV-I. "Oddly," wrote Shilts, "his antibody had been almost inactivated when it arrived from Dr. Robert Gallo's lab." Montagnier labored to run the analysis anyway.

But that also seemed odd. The report I had read in 'Nature' revealed that Montagnier already had Gallo's HTLV antibody test kit as early as 1982. [14]

Shilts also reported that after writing up the results and submitting his paper to Science for publication, Montagnier learned that Gallo was sent the manuscript as "part of the review process." Gallo criticized the work and informed Montagnier that the acronym he had used to initially name his retrovirus, "RUB," was offensive. The NCI chief retrovirologist then persuaded the French researcher to claim his find was from the HTLV family of viruses that he had discovered. [15]

Collusion at the Top

Jim Goedert was one of many AIDS researchers at the NIH who was foundering for lack of staff and money. In April 1983, he approached the NCI for assistance and was met with a response far less than was expected given. Gallo's widely recognized work with reverse transcriptase. Shilts wrote:

"[T]he NCI lab where he sent his blood samples. . . [allegedly] did not have the capabilities to look for reverse transcriptase, the sure marker of retroviral infection. The tests were never run. Life as an AIDS researcher at the National Cancer Institute, he later remarked, meant "chronic frustration." " [16]

Later:

"On Capitol Hill, Representative Ted Weiss experienced similar frustrations when he attempted to review unclassified NCI and CDC documents. Weiss, assigned by the House Subcommittee on Federal AIDS Funding to review CDC budget records, obtained through less-than-formal channels a National Cancer Institute memo, ordering that before any interviews with congressional investigators, NCI researchers should advise agency officials and "invite" a top administrator to attend."

So much for an independent review, Weiss thought. Another memo, sent by CDC Director William Foege, instructed federal agency chiefs that, "All material submitted to the Congress must evidence the Department's support of the administration's stated policies." [17]

Change of Heart

Despite his "distaste for the whole subject of AIDS," by April 1983, Gallo could see that "the stakes were being redefined." [4] The French were about to publish their findings as was Max Essex at Harvard. "So on April 11, 1983, the NCI's Deputy Director Peter Fishinger called a meeting for 4:30 P.M. in the director's conference room. This marked the first gathering of the NCI Task Force on AIDS." Here, Gallo forcefully acknowledged his concern about the French who had delivered a lymph node for him to study. [4]

"I believe a retrovirus is involved, and we're going to prove it or disprove it within a year," declared Gallo. "We're going to spend a year and nail this down one way or another." Allegedly then, Fishinger promised Gallo that he could have the full resources of the NCI's elite laboratory in Frederick (Fort Detrick), Maryland. [4]

Montagnier's Alleged Discovery

Once Montagnier learned that the new retrovirus he had isolated was not a leukemia virus, but something completely unique, he chose to rename it LAV, or lymphadenopathy-associated virus, rather than RUB or HTLV. . . .

Shilts chronicled:

"Montagnier was surprised that there wasn't more enthusiasm about the Pasteur Institute's announcement of a new retrovirus. Most scientists wanted to defer final judgment until more research came from Robert Gallo's lab. . . . Gallo was, after all, a far more famed retrovirologist, and he was talking HTLV. . . . Montagnier was gaining more confidence that the Pasteur Institute had indeed discovered the virus that caused AIDS. Still, he was stumped as to which family of viruses LAV belonged. If not HTLV, then what?"

"The chance encounter with another virologist on the Pasteur campus gave Montagnier the final piece to the puzzle. The associate mentioned a family of viruses, primarily found in animals, called lentiviruses. Lenti means slow. These viruses go into the cells, lie dormant for a while, and then burst into frenzied activity. Montagnier had never heard of the family before. . ."
[18]

"What!" I exclaimed, breaking the night's silence. I couldn't believe my eyes. He had never heard of the family of slow viruses before? "That's absolutely ludicrous." How could he not have heard about the hottest rage in virology during the late 1960s and early 1970s?

What I had just read in Shilts's book didn't jive with my knowledge of the scientific reality. Something was up with the French connection that Shilts completely overlooked. Something deeply troubling.

Montagnier allegedly spent the night reading about cattle viruses and was amazed to find LAV had the same morphology, the same proteins, and even the same look under the electron microscope. [18]

The French Francis Fracas

Prior to hailing the discovery of HTLV-III as the AIDS virus, Gallo, representing the NCI, met with Don Francis from the CDC and Dr. Jean-Claude Chermann from the Pasteur Institute to negotiate the claims that would be made to the international press. The discussions, wrote Shilts, "quickly acquired the mood of delicate arms negotiations among parties who shared only mutual distrust." [19]

Gallo absolutely refused to discuss specifics about his upcoming

HTLV-III publication in Francis's presence. Francis was frequently required to leave the room while Chermann and Gallo conferred privately.

"The Pasteur scientists were astonished that one branch of the U.S. government should hold another in such low regard." [19] Ultimately, Don Francis determined from electron micrographs he had obtained from Europe that Montagnier's and Gallo's retroviruses were the same. In light of the germ's dissimilarity to the HTLV family of retroviruses, he argued in favor of the French naming the virus. Following intense negotiations, however, the naming issue remained unresolved, though the three researchers worked out an agreement to jointly announce the discovery of the AIDS virus by the CDC, NCI and Pasteur. Shilts then chronicled Gallo's efforts to sabotage this agreement and claim the lion's share of credit for himself. Standing alongside Chermann in the pissoir, he offered, "We can do this together - just the Pasteur Institute and the NCI," he said. "We don't need the CDC." Chermann dismissed the proposal. The next morning, during breakfast with Don Francis, Gallo remarked that he would probably get the most credit during the announcement because he maintained the most HTLV-III isolates. Then he offered Francis the proposal Chermann refused the night before. "We don't need the Pasteur Institute," he argued. "The CDC and the NCI can announce this ourselves." [19]

On April 23, 1984, the announcement was made by Margaret Heckler, Secretary of the Office of Health and Human Services, that Robert Gallo, essentially unaided by the French and COC, had discovered the AIDS virus.

"The doctors who accompanied Heckler to the podium blanched visibly," Shilts noted, "when she proclaimed that a blood test would be available within six months and a vaccine would be ready for testing within two years." The blood test had already been available for over two years, I reflected, but I understood why they blanched with the announcement of a vaccine. [20]

The Emperor's New Virus

Ten months later at a prestigious AIDS meeting in New York, Dr. Joseph Sonnabend revealed that Gallo's HTLV-III and Montagnier's LAV were "identical. . . to a degree that would not be anticipated with two independent isolates from the same family."

"Would you be brave enough to voice explicitly the implications of what you're saying here?" Sonnabend was asked by an attending physician.

"No, I wouldn't," Sonnabend replied. "I'm not the right person to be saying that."

"Neither am I," said the other doctor.

"What are you talking about here?" asked an Associated Press reporter.

"Do you know something that you are not saying?"

"They appear to be the same actual isolate," Sonnabend finally admitted. "Or some strange coincidence."

"What are you suggesting?" another person asked.

Dr. Mathilde Krim, the conference organizer, chimed in, "Dr. Montagnier felt very appropriately that he was not the person to point this out."

"Nobody's pointed it out quite exactly yet," voiced a frustrated reporter.

"It's perhaps a complicated notion for you to understand," said Krim, "but I think you are coming close."

Donald Drake, a veteran science writer for the Philadelphia Inquirer was one of few journalists present who understood the meaning of Sonnabend's remarks.

"Are you suggesting that Gallo swiped his virus from the French?" Drake queried.

"Or Montagnier swiped Gallo's virus, or we are dealing with a very strange coincidence," replied Sonnabend diplomatically.

"A light bulb goes off," blurted the San Francisco Chronicle panelist.

It was now understood by all in attendance. In virology, it is inconceivable that a genetic variation between two different viruses could be less than 1 percent as was the case with Gallo's HTLV-III and Montagnier's LAV. As Shilts put it, "That would be like finding two identical snowflakes.

It simply didn't happen." [21]

Sonnabend was pointing out the scientific fact that Gallo had simply cloned the virus Montagnier had sent him, then claimed it was his discovery, or Gallo had supplied Montagnier with his virus, and now both were claiming credit for the discovery.

Disharmony in "The Band"

Even more disturbing than the French-American AIDS fracas, however, was the possibility that Gallo may have indeed discovered the virus, not in 1984, but at least a decade earlier, and the French most likely knew about it.

Support for this frightening theory existed, I realized, not only in the suspicious and offensive actions Gallo and the NCI took in trying to prevent others from discovering the AIDS virus.

Apparently, Gallo resisted and resented the challenge of identifying the suspected retrovirus as late as December 1982. Shilts reported with masterful clarity:

"Because the genetic material of retroviruses is made of RNA that must be transcribed to DNA for the construction of viral duplicates, retroviruses need a special enzyme to reproduce - the reverse transcriptase enzyme. By November [1982], Gallo's lab had found evidence of reverse transcriptase in the infected lymphocytes of AIDS patients. This enzyme, in effect, had left

the footprints of a retrovirus all over the lymphocytes. **But it was impossible to find the damned retrovirus itself** [emphasis added] That was the rub."

In addition, **Gallo's staff couldn't keep the lymphocytes alive.** They died. Any leukemia virus, Gallo knew, caused the proliferation of cells, not their death. People with leukemia have too many white blood cells. When Gallo's staff added lymphocytes from the blood from AIDS patients, however, to lymphocytes in culture, the lymphocytes would die without any proliferation. The frustration was galling and, by November, Gallo had made what would prove to be among the most important decisions of his career. He gave Up. [16]

This doesn't make any sense, I thought. Gallo discovered interleukin-II. Six months earlier, "an associate of Gallo said that he had started culturing lymphocytes from a GRID patient in a special culture medium Gallo had developed that contained interleukin-II." The IL-II, Don Francis recognized was a perfect addition to a growth medium for lymphocytes. "By easily being able to grow lymphocytes, Gallo had already overcome a formidable research barrier," Shilts reported. [11]

Now, I considered, Gallo was quitting because he allegedly couldn't keep infected lymphocytes alive long enough to study them or isolate their attackers. I found both hard to believe. First of all, the French discovered how to keep their lymphocytes alive quite rapidly. Why couldn't Gallo who had far more experience in the field? Second, Shilts noted earlier Margaret Heckler's correct comment that Gallo alone had discovered how to reproduce the virus in large enough quantities to develop a blood test - a test used by the French as early as 1982. [20] Third, to reproduce the virus, he needed the cell lines in which to grow them - lymphocytes which he had apparently kept alive long before the French. Fourth, if the French had isolated AIDS viruses using Gallo's largely inactivated antibodies to tag them, then how come Gallo couldn't find them with his superior-quality reagents? And finally, seasoned researchers just don't give up so easily.

But that was not the worst of it. Following the official United States government announcement that Gallo had discovered the AIDS virus, Shilts wrote:

"How timely was the discovery of the long-sought AIDS virus? . **As it turned out, the AIDS virus was not a particularly difficult virus to find. The French took all of three weeks to discover LAV** [emphasis added] and had published their first paper on it within four months. This early publication lacked the certainty of a definitive discovery, but the French had enough evidence to assert they had found the cause of AIDS by the summer of 1983, seven or eight months into the research process." [22]

And their efforts had been allegedly delayed by Gallo's inactivated antibodies, I reflected.

"Nor was the NCI research marked by great longevity. Gallo's announcement of forty-eight isolates of HTLV-III came just twelve days past the first anniversary of the April 11, 1983, NCI meeting in which the researcher swore he would "nail down" the cause of AIDS. Meanwhile, at the University of California in San Francisco, it took Dr. Jay Levy about eight months to gather twenty isolates of a virus he called AIDS-associated retrovirus, or ARV, which he too believed to be identical to LAV. Levy's research was hampered by lack of resources and did not begin in earnest until after the arrival of his long-sought flow hood and the release of UC research funds impounded the previous autumn." [22]

And all the discoveries used methods and materials developed, perfected, and supplied by Dr. Gallo, I realized.

The next day, I learned that the testing methods and reagents for identifying RNA reverse transcriptase in virus-infected cells as well as antibodies to detect retroviruses, Gallo and coworkers developed more than ten years earlier than had been publicized. [22-27]

Gallo was among the world's champions at quickly identifying reverse transcriptase enzyme and RNA retroviruses. Long before identifying the growth hormone interleukin-II [26,27,29] Gallo and coworkers identified more than a dozen human lymphocyte and RNA tumor virus growth stimulants. [30]

His primary business was allegedly trying to determine the cause of leukemia, a cancer associated with the rapid proliferation of white blood cells. Thus, methods and materials used to increase the reproductive rate of RNA retroviruses and the white blood cells they infected, Gallo and company researched in depth in the early 1970s. It was highly suspicious then that following a decade of successfully doing so, he was suddenly unable to keep RNA retrovirus-infected lymphocytes alive.

So, I considered, if this was a lame excuse to quit searching for the easily isolated AIDS virus, then what was his real motivation?

As "most CDC researchers privately believed," [22] Shilts wrote, it is inconceivable that Gallo would not have readily isolated the "true" AIDS virus well before 1982 given his formidable background and resources.

"What delayed the NCI, therefore, was not the difficulty in finding the virus but their reluctance to even look." [22]

With all the glory attached to the earliest discovery of the AIDS virus, what powerful force could have moved the world's citadel of retrovirus research - Gallo and the NCI - away from the challenge that could have been met so handily?

There were few plausible explanations - only more horrifying

questions. Had Gallo been ashamed of creating the virus years earlier, so he tried to block its discovery, terrified it might be traced to BW research?
I never did get any sleep that night.

-NOTES-

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- [4] Shilts R. *Ibid.*, p. 270-271.
- [5] Shilts R. *Ibid.*, p. 151.
- [6] Shilts R. *Ibid.*, p. 163.
- [7] Shilts R. *Ibid.*, pp. 73-74.
- [8] Shilts R. *Ibid.*, p. 186.
- [9] Shilts R. *Ibid.*, p. 173.
- [10] Shilts R. *Ibid.*, p. 201-202.
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- [12] Shilts R. *Ibid.*, p. 350.
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- [17] Shilts R. *Ibid.*, p. 354.
- [18] Shilts R. *Ibid.*, p. 319
- [19] Shilts R. *Ibid.*, p. 444.
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[30] Among the human lymphocyte and RNA retrovirus reproductive stimulants Gallo and his co-workers studied were: phytohemagglutinin (a plant protein which makes red blood cells stick together) - see Riddick DH and Gallo RC. *The Transfer RNA Methylases of Human Lymphocytes: Induction by PHA in Normal Lymphocytes.* *Blood* 1971;37;3:282-292.; isopentenyladenosine (a plant hormone and component of yeast and mammalian tRNA)--see Gallo RC, Whang-Peng J and Perry S. *Isopentenyladenosine Stimulates and Inhibits Mitosis in Human Lymphocytes Treated with Phytohemagglutinin.* *Science*; 1969; 165:400-402; dibutyryl adenosine cyclic 3'5'-monophosphate (a chemical messenger and hormone stimulant in cells)--see Gallo RC, Whang-Peng J. *Enhanced Transformation of Human Immunocompetent Cells by Dibutyryl Adenosine Cyclic 3',5'-Monophosphate.* *Journal of the National Cancer Institute.* 1971;47;1:91-94; magnesium (an element and dietary component) see Gallo RC, Sarin PS, Allen, PT, Newton WA, Priori ES, Bowen JM and Dmochowski L. *Reverse Transcriptase in Type C Virus Particles of Human Origin.* *Nature New Biology* 1971;232;140-142; Epstein Barr virus (a virus strongly linked to Burkitt's-type lymphoma, cancer of the nasopharynx and infectious mononucleosis) see Fujioka S and Gallo RC. *Aminoacyl Transfer RNA Profiles in Human Myeloma Cells.* *Blood* 1971; 38;2:246-252; manganese (a metallic element)-see Smith RG and Gallo RC. *DNA-Dependent DNA Polymerases I and II from Normal Human-Blood Lymphocytes.* *Proceedings of the National Academy of Sciences* 1972; 69; 10:2879-2884; adrenal corticosteroids and related steroid hormones including dexamethasone, prednisolone, fludrocortisone, hydrocortisone, corticosterone, cortisone, testosterone, progesterone, and insulin-see Paran M, Gallo RC, Richardson LS and Wu AM. *Adrenal Corticosteroids Enhance Production of Type-C Virus Induced by 5-Iodo-2'-Deoxyuridine from Cultured Mouse Fibroblasts.* *Proceedings of the National Academy of Sciences* 1973;70;8:2391-2395.

Chapter 6

Gallo's Research Anthology: The AIDS Buck and Virus Stops Here

EARLY the next morning, I made my way to Countway's Cumulated Index Medicus to look up all of Gallo's early work. I started my search in 1965, figuring it would have taken him at least five years to establish himself as an expert in the field of retrovirology by 1970. The 1965 and 1966 year-books cited nothing of Gallo's efforts, but 1967 held two such references in what became a long list of Gallo publications. By days end, I held a stack of nearly forty research reports published by Gallo and coworkers before 1975.

It took me about two weeks of reading, with frequent referencing of medical texts for explanations to technical information that I found difficult to understand. My earlier lessons in biochemistry, cell physiology, genetics, and virology all needed refreshing. With my head buried in scientific literature, I saw very little of my family those weeks.

I began my review of Gallo's papers by organizing them chronologically. I read each paper, highlighted important details in yellow, then noted the purpose, conclusions, and potential relevance to the development of AIDS-like viruses. In the end, I held six pages of tables summarizing the data (see fig. 6.8).

Introduction to Retrovirology

A fundamental understanding of what HIV is and how it works is required before discussing the development of AIDS-like viruses by Gallo and his coworkers.

The AIDS virus is an extremely unique germ. Most astonishing is that it incorporates elements that cause normal white blood cells (WBCs) to produce more viruses through a somewhat unnatural and uniquely backward process.

One of HIV's main components is a single chain of genetic material. This single strand is called RNA, short for ribonucleic acid. It comprises sugars combined with chemical (molecular) rings called purines and pyrimidines (see fig. 6.2).

After the virus gets into a T4lymphocyte or CD4 helper cell (a type of WBC), its RNA genetic code directs the blood cell to produce a similar nucleic acid chain called DNA, short for deoxyribonucleic acid. DNA is the genetic blueprint all cells use to reproduce normally.

DNA directs the manufacture of all new proteins and other cell parts, including RNA. In the case of an RNA retrovirus infection, however, this natural direction is commandeered to run in reverse. In this case, the viral RNA directs the manufacture of

deadly foreign DNA, which then commands the cell's reproductive machinery to produce more viruses rather than healthy new cells.

This switch in reproductive control is accomplished partly because RNA and DNA are very much alike. The only difference between them is the substitution of one sugar-linked molecule, called uracil in RNA, for another one, called thymine, in the DNA (see figs. 6.1 and 6.2).

As shown in fig. 6.3, AIDS viruses have a special attraction for T4 lymphocytes. These blood cells possess special magnetlike CD4 receptors. These attachments normally serve to detect and help destroy foreign invaders, called antigens, via a complex immunological defense system. These CD4 receptors bind to a portion of HIV's outer envelope known as the gp 120 antigen. The CD4-gp 120 interaction allows the AIDS virus to be transported across the lymphocyte's protective outer membrane, and once inside the cell, the viral envelope opens releasing the unique RNA and special enzymes into the human cell. [1]

Then, by means of the special reverse transcriptase enzyme-so named because it prompts the "reverse" process of copying DNA to RNA - the RNA code is copied to produce a new "proviral DNA" strand. This enzyme is technically called RNA-dependent DNA polymerase. It directs the cell to produce a DNA gene sequence from the viral RNA template, the exact opposite of what normally occurs in the non-infected cell.

This DNA provirus then enters the cell's nucleus where genetic materials are stored. Here the provirus is inserted into the host's normal gene sequence through the work of another unique enzyme known as viral endonuclease. The endonuclease enzyme functions like a pair of scissors. It cuts open the cell's normal DNA strand allowing the newly formed provirus to be inserted.

Later, during normal cell operation, the provirus directs new viral proteins to be produced, which eventually bud off the cell forming new viruses. [1]

This is the theory Gallo advanced first in 1972 during the "war on cancer" in order to explain retrovirus related cancers such as lymphoma, leukaemia, and sarcoma. Twelve years later, he advanced the same theory to explain AIDS.

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Fig 6.1 - The Molecule Structures Comprising Nucleic Acids
RNA and DNA - Life's Building Blocks:

PENDING

Source: Asimov I. The Intelligent Man's Guide To Science.
Volume II, The Biological Sciences. Basic Books, 1960. pp.526-527.

Fig 6.2 - A Model of the Nucleic-Acid Molecule:

PENDING

The drawing at the left shows the double helix; in the center a portion of it is shown in detail (omitting the hydrogen atoms); at the right is a detail of the nucleotide combinations. Source: Asimov I. The Intelligent Man's Guide To Science. Volume II, The Biological Sciences. Basic Books, 1960. p.532. Reprinted with permission.

Fig 6.3 - Replication of the AIDS Virus - HIV/CD4 Cell Interaction:

PENDING

Source: Germain RN. Antigen processing and CD4+ T cell depletion in AIDS. 'Cell' 1998;54:441-414

Gallo's Cancerous Creations

In 1971, the year following the \$10 million DOD appropriation for the development of AIDS-like viruses, the NCI acquired the lion's share of the Fort Detrick facilities, and the Cell Thmor Biology Laboratory's output increased as measured by the publication of eight scientific articles by Gallo and his coworkers compared to at most four in previous years.

Among Gallo's earliest reports was the discovery that by adding a synthetic RNA and cat leukaemia virus "template" to "human type C" viruses - those associated with cancers of the lymph nodes - the rate of DNA production (and subsequent provirus and virus reproduction) increased as much as thirty times. Gallo and company reported that such a virus may cause many cancers besides leukaemias and lymphomas, including sarcomas. [10] Regarding Gallo's widely accepted 1983 speculation that the AIDS virus arose from an African monkey virus that naturally jumped species and then was carried by Portugese seamen to Japan (see fig. 6.4), in 1971 he and his team published a seemingly conflicting statement. "Only one virus [of 27 then known RNA retroviruses] which contains reverse transcriptase," they wrote, "does not seem to be oncogenic [cancer causing]" - the simian foamy virus. [10]

At the time, simian foamy viruses were known to be common, humanly benign, vaccine contaminants. Had the simian virus simply jumped species then, I considered, it is doubtful it would

have gained the cancer-causing capabilities seen in AIDS. Additional mutations would have been needed to make it so carcinogenic.

Then, suddenly, there it was. "Mama Mia!" I exclaimed. "I can't believe he published this." Gallo and company, including frequent coauthor Robert Ting from Litton Bionetics, reported modifying simian monkey* viruses by infusing them with cat leukaemia RNA to make them cause cancers as seen in people with AIDS (see fig. 6.5). [9,10]

Furthermore, Gallo and his coworker Seitoku Fujioka concluded from studies conducted in late 1969 or early 1970 that they would need to further "evaluate the functional significance of tRNA changes in tumor cells." To do this, they designed an experiment in which "specific tumor cell tRNAs" were "added directly to normal cells." They explained that one way of doing this was to use viruses to deliver the foreign cancer producing tRNA to the nonnal cells. The viruses that they used for this purpose, were the simian monkey virus (SV 40) and the mouse parotid tumor (polyoma) virus." [11]

These experiments, I realized, could have easily established the technology for the development of HIV-allegedly of simian virus descent - which similarly delivers reverse transcriptase and a foreign cat leukemia/sarcoma-like RNA to nonnal human white blood cells.

[* The word "simian" before monkey, introduced by the mass media, is actually redundant. Since most people now associate the two, however, particularly in connection with the origin of the AIDS virus, the phrase "simian monkey" will be used in this book to mean just "monkey."]

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Fig 6.4 Possible Origin of HTLV:

PENDING

This diagram was presented by Dr. Robert Gallo of the National Cancer Institute during his introductory speech before a meeting on "Human T-Cell Leukemia Viruses" at the Cold Spring Harbor Laboratory in New York. Source: Essex M and Gallo R. Human T-Cell Leukemia Viruses: Abstracts of papers presented at the Cold Spring Harbor Laboratory Meeting, Sept. 14-15, 1983. New York: Cold Spring Harbor Laboratory, 1983, p. iv.

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Obvious Link to NATO

That same year, Gallo and his coworkers presented research describing the experimental entry of bacterial RNA into human WBCs before a special symposium sponsored by the North Atlantic Treaty Organization (NATO)? The paper published in the Proceedings of the National Academy of Sciences discussed several possible mechanisms prompting the "entry of foreign nucleic acids" into lymphocytes.

I flashed back to my knowledge of the controversial symposium on the entry and control of foreign nucleic acids, held on April 4 and 5, 1969, at Fort Detrick, and noted Gallo's link to this work. Here was documented evidence that senior investigator Robert Gallo presented the methods and materials used to produce AIDS-like viruses before NATO military scientists at "the NATO International Symposium on Uptake of Infonnative Molecules by Living Cells" in Mol, Belgium, in 1970. [2]

I sat stunned while reading that Gallo and his coworkers had also published studies identifying (1) the mechanisms responsible for reduced amino acid and protein synthesis by T-lymphocytes required for immune system failure; [3] (2) the specific enzymes required to produce such effects along with a "base pair switch mutation" in the genes of WBCs to produce the small DNA changes needed to create extreme immune system failure; [4] and (3) the methods by which human WBC "DNA degradation" and immune system decay may be prompted by the "pooling" of nucleic acids, purine bases, or the addition of specific chemical reagents. [5]

A subsequent study published in 1970 by Gallo and his colleagues identified RNA-dependent DNA polymerase. Gallo's team noted that this enzyme was responsible for gene amplification and biochemical cytodifferentiation (the development of unique WBC characteristics including cancer cell production) and leukaemogenesis (the production of leukemia). [6] Another of their studies identified L-Asparaginase synthetase - an important enzyme that, if blocked, will cause treatment-resistant leukemias and other cancers. [7]

Just what the DOD ordered, I recalled,

"[M]ake a new infective microorganism. . . most important. . . that it might be refractory to the immunological and therapeutic processes upon which we depend to maintain our relative freedom from infectious disease." [8]

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Fig 6.5 - Development of AIDS-like Viruses by Robert Gallo and Associates at the NCI and Litton Bionetics:

PENDING

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Creating More AIDS-Like Viruses

By 1972, Gallo and coworkers studied portions of simian monkey and mouse salivary gland tumor viruses to determine differences in RNA activity between infected versus uninfected cancer cells. [9] They wrote:

"[B]y studying viral or cellular mutants or cell segregants . . . which have conditional variations in virus-specific cellular alterations, it should be possible to more precisely determine the biological significance of the . . . RNA variation reported here." [9]

The group was trying to determine the importance of various viral genes on the development of human cancers and immune system collapse. They reported their desire to use this information to find a cure for cancer, but at this time their activity was more focused on creating various cancers and carcinogenic viruses that could infect humans. [9-11]

From this work, I also realized, Gallo was actually cloning simian monkey viruses as early as 1970. So allegations that he had cloned Montagnier's virus were buffeted by the fact that he had over a decade of practice in the procedure.

Another example of Gallo's work in creating new viruses to cause cancer in humans was published for the benefit of the NAS. Here Gallo and company examined the activity of the special AIDS-linked DNA polymerase enzyme in normal versus acute immature leukaemic lymph cells, that is, lymphoblasts. To do so, they evaluated the single stranded "70S RNA retrovirus" found in chickens, which caused prominent features of AIDS, including WBC dysfunction, sarcomas, progressive wasting, and death (see fig. 6.5). [12]

Gallo and his team injected this chicken virus RNA into human WBCs to determine if the cells were prompted to produce proteins and new viruses called for by the viral RNA.¹³ Another Gallo team evaluated the human cancer-causing effects of the single-stranded 70S RNA reverse transcriptase enzyme—a genetic catalyst essentially identical to the one found in HIV. They used cat leukemia viruses (FELV) and Mason-Pfizer monkey viruses to deliver these carcinogens to normal human lymphocytes. [14] I instantly realized that this work foreshadowed the observation made ten years later by the CDC's chief AIDS researcher, Don Francis, who noted the "laundry list" of feline leukemia-like diseases associated with AIDS. [15] Had Francis known about this early work? I considered it most conceivable that he would have.

Other Gallo publications detailed the steps involved in creating immune-system-destroying-cancer-causing viruses by adapting monkey, rat, and bird leukemia and tumor viruses for experimental use in a human (NC-37) cell line. ¹⁶ One Gallo

team discussed the synthesis of new RNA tumor viruses induced by 5-iodo-2'-deoxyuridine (IdU), a constituent of RNA in rodent cell cultures, and noted that chemical treatment might be used to halt the reverse transcriptase-linked viral reproduction cycle. [17] They were apparently looking for a cure for AIDS-like symptoms as early as 1972.

Then I read a Gallo team discussion in 1973, which concerned the origin of the RD 114 cat-human virus. "It can always be argued," they wrote, that a virus that jumped species would be expected to have foreign protein markers, that is, antigens, that differ "from the antigen found on the viruses of known" origin. [18]

So if Gallo and his coworkers had synthesized HIV for military or medical purposes from various animal virus components, I realized, it would be difficult if not impossible to prove.

Finally, in another report published in the 'Proceedings of the National Academy of Sciences,' Gallo and associates proclaimed they had isolated a virus-like particle from human acute, that is, quick-acting, leukemic WBCs. This particle, they noted, has a specific density of 1.16-1.17 g/ml, which allowed it to be repeatedly recovered without being destroyed by physical handling. Moreover, it was capable of producing the principal rapidly growing cancers seen in AIDS, including leukemias, sarcomas, and carcinomas. [19]

In conclusion, I learned that Gallo and his group of researchers created numerous AIDS-like viruses for more than a decade before Luc Montagnier announced the discovery of LA V.

Links to the DOD

Throughout my review of Gallo's research, besides citing the NCI as his chief source of support, the names Bionetics, Bionetics Research Laboratories, and Litton Bionetics, Inc., repeatedly appeared (see fig. 6.6).

For days, I wondered who or what Bionetics was? This mystery ended when I retraced Ted Strecker's steps through the Ninety-first Congress's House hearings on DOD appropriations for 1970. The Congressional Record contained several sections dealing with chemical and biological weapons funding. One contained the list of major Army contractors shown in fig. 6.7.

Bionetics Research Laboratories, a subsidiary of Litton Industries, Inc. was sixth on the list of acknowledged biological weapons contractors. [20]

Later congressional records showed that Bionetics's affiliate - Litton Systems, Inc., a subsidiary of Litton Industries, Inc. - was among the most frequently contracted companies involved in BW research and development between 1960 and 1970.²⁰ Additional BW contractors with whom Dr. Gallo or his coworkers associated during the late 1960s and early 1970s included the Universities of Chicago, Texas, Virginia, California, Yale, and

New York. [21]

Breaking the News

I emerged from my two weeks of laborious isolation noticeably pale. My mind raced with questions about the risk of continuing the investigation. I also wondered how I would break the whole truth about my findings to Jackie. The pragmatist in our family, she would immediately consider the sensitivity of the information and its potential affect on our lives.

Following a brief summation of my findings aided by the six pages of tables I had developed (see fig. 6.8), Jackie shattered a long and anxious silence. "What are you going to do now?"

"I don't know. What do you think I should do with this kind of information?"

"Bury it! Or else we'd better get the hell out of this country. Do you know what the risk is in getting this information out?"

"I don't even want to think about it."

"Well you'd better think about it," she ordered. "Look what happened to Strecker's brother and that congressman from Illinois.

"And what about Strecker? Have you been able to reach him?"

"No. Every time I call, the phone just rings and rings. And that other doctor from Georgia who wrote that article about Strecker, William Douglass, I've left a half-dozen messages for him on his answering machine, but he's never returned one."

"Well you better find out if Strecker's still alive before you do anything else," Jackie said.

That night before bed, after her initial shock lessened, I said,

"You know, this thing is bigger than just us. This is about the world. The kind of world we'll leave behind for our children."

"I know it," Jackie replied. "That's what scares me most."

Fig 6.6 - Sample Publication Documenting Robert Gallo's Work With Investigators at Litton Bionetics:

NATURE VOL. 228. DECEMBER 5, 1970

RNA Dependent DNA Polymerase of Human Acute leukaemic Cells

by

ROBERT C. GALLO.

Section on Cellular Control Mechanisms,

Human Tumor Cell Biology Branch,

National Cancer Institute.

National Institutes of Health,

Bethesda, Maryland 20014

STRINGNER S. YANG
ROBERT C. TING
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Bethesda, Maryland 20014

An RNA dependent DNA polymerase analogous to that of RNA tumour viruses has been found in lymphoblasts of leukaemic patients but not of normal donors. The enzyme can use an RNA template from mammalian cells to synthesize DNA.

RECENT reports by Temin and Baltimore that an RNA dependent DNA polymerase activity is present in oncogenic RNA viruses, now confirmed and extended in other laboratories provide a mechanism by which an RNA virus may insert stable genetic information into a host cell genome.

The aetiology of human acute leukaemia is not known, but a role for RNA oncogenic viruses in human neoplasia has been proposed for several reasons. Although RNA virus particles have not been clearly associated with human leukaemia, we have examined human leukaemic cells for the presence of an RNA dependent DNA polymerase because: (1) it is possible that RNA Virus particles are regularly present in human leukaemic cells but cannot be detected by ordinary means. The presence of a unique enzyme might be a more sensitive index. (2) The virus particles may never be formed but the viral genome would be integrated and undetected, yet functional in the host cell. The enzyme could be required for subsequent formation of additional viral DNA used in infection of other host cells. (3) Information flow from RNA to DNA raises interesting questions regarding gene amplification during biochemical cytodifferentiation. This mechanism could have considerable implications for cell growth and differentiation, and because human leukaemia has been considered a disorder of cell differentiation, it may also have implications for leukaemogenesis".

Choice and Preparation of Cells

Several considerations influenced our choice of cells. First, acute leukaemia was selected rather than the chronic form because the characteristics of the former cell type are more malignant and less often contaminated with other types of leucocytes. In leukaemia of an acute "blastic" type, a population of almost 100 per cent blasts can be obtained directly from a patient. Second, the lymphoblastic type was chosen rather than the myeloblastic (granulocytic type) because the latter are more likely to be associated with other more differentiated cells of the myeloid (granulocytic) series. These cells contain abundant lysosomes with high nuclease activities, making any RNA analysis or polymerase assay extremely difficult. Third, proliferative lymphoblasts can also be obtained from normal human volunteers. This is achieved by transformation of normal

peripheral blood lymphocytes to lymphoblast with a mitogenic agent. Fourth, the polymerase activities of tumour cells are generally higher than those of normal adult organs. A much greater content of various polymerases would be more likely to lead to a spurious interpretation of a unique polymerase in such cell types. For this reason, we would expect a better controlled comparison between normal and neoplastic cells of comparable DNA and RNA polymerase activities.

The simple use of peripheral blood leucocytes, which consist primarily of fully mature non-proliferating granulocytes and lymphocytes, cannot be considered as controls for leukaemic blast cells, particularly in view of the fact that these cells have minimal or no detectable DNA dependent DNA polymerase activity. On the other hand, after 72 h of stimulation of normal human lymphocytes with phytohaemagglutinin (PHA), DNA synthesis is maximal. In addition, Loeb 'et al' have reported a 30 to 100-fold induction of DNA polymerase at this time, so that activities reach levels comparable with neoplastic cells, and Hausen 'et al' have reported an induction of RNA polymerase in lymphocytes stimulated with PHA. We have confirmed both these findings (unpublished results). Fifth, human cells obtained directly from peripheral blood instead of human tissue culture cell lines were chosen for these initial investigations because they obviously are a more true reflexion of the disease. Furthermore, there is much less chance of contamination with microorganisms or of developing mutations not relevant to leukaemogenesis.

The leukaemic cells utilized in this study, therefore were peripheral blood lymphoblasts obtained from three patients with acute lymphoblastic leukaemia (ALL). In each, the number of lymphoblasts was more than 100,000/mm³ of blood. Two patients were untreated and the third received hydroxyurea for one day. Normal lymphocytes were obtained from the peripheral blood lymphocytes of forty-eight normal donors.

The lymphocytes were separated from other blood cells, as previously described, except that an additional nylon column chromatographic step was carried out to obtain more pure cell populations (more than 98 per cent lymphocytes). These cells were incubated with the mitogenic agent and harvested after 72 h as previously described. In our conditions, at 72 h the number of cells transformed to lymphoblasts and the rate of DNA synthesis are maximum. After terminating the incubation, the cells were extensively washed with 0.15 M NaCl and used for polymerase assays.

RNA dependent DNA Polymerase Activity

Nucleic acid from preparations were made by gentle manual homogenization (Ten.Broeck) of purified lymphoblast pellets in 3 volumes of 25 mM Tris-sulphate buffer, pH 8.3; 1mM MgSO₄; 6 mM NaCl; 4 mM dithiothreitol; and 0.1 mM EDTA. The samples were centrifuged at 15,000 r.p.m., and the supernatants

and pellets separated. The pellets of membranes and nuclei were washed with the same buffer with gentle homogenization. After centrifugation the wash (second supernatants) was combined with the first supernatants and the nuclei-membrane pellets removed. Nucleic acids were removed from the supernatant fractions by successive precipitations with MnCl₂ and...

[One of dozens of publications authored by Robert C. Gallo and colleagues affiliated with Bionetics Research Laboratories, Bionetics, or Litton Bionetics. These subsidiaries of Litton Industries, Inc. were listed among most frequently contracted companies involved in biological weapons research and development during the 1960s and 1970s. [20,21] Source: Gallo RC, Yang SS and Ting RC. RNA Dependent DNA Polymerase of Human Acute Leukaemic Cells. Nature 1970; 228:927.]

Fig 6.7 - Major United States Army Biological Weapons Contractors for Fiscal year 1969:

Mr. Mahon. List for the record the major contractors and the sums allocated to them in this program in fiscal year 1969.

(The information follows:)

The following list contains the major contractors and amounts of each contract.

Contractor

Fiscal year 1969

Miami, University of Coral Gables Fla
\$645,000

Herner and Co., Bethesda. Md
\$518,000

Missouri, University of, Columbia, Mo
\$250,000

Chicago, University, of Chicago, Ill
\$216,000

Aerojet-General Corp., Sacramento, Calif
\$210,000

Bionetics Research Laboratories, Inc., Falls Church, Va
\$180,000

West Virginia University. Morgantown, W. Va
\$177,000

Maryland. University of, College Park. Md
\$170,000

Dow Chemical Co., Midland, Mich
\$158,000

Hazleton Laboratories, Inc., Falls Church, Reston. Va
\$145,000

New York University Medical Center, New York, NY
\$142,000
Midwest Research Institute. Kansas Clty, MO
\$134,000
Stanford University, Palo Alto, Califf
\$125,000
Stanford Research Institute, Menio Park, Califf
\$124,000
Pfizer and Co., Inc., New York, NY
\$120,000
Aldrich Chemical Co., Inc., Milwaukee, Wis
\$117,000
Computer Usahe Development Corp., Washington, D.C.
\$110,000
New England Nuclear Corp., Boston, Mass
\$104,000

Source: Department of Defense Appropriations For 1970:
Hearings Before A Subcommittee of the Committee on
Appropriations House of Representatives, Ninety-first Congress,
First Session, H.B. 15090, Part 5, Research, Development, Test
and Evaluation of Biological Weapons, Dept. of the Army. U.S.
Government Printing Office, Washington, D.C., 1969, p689.

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Fig 6.8 - The Early Research of Cr. Robert Gallo at the National
Cancer Institute and it's Implications in relation to the Theory of
synthetic HIV Development:

PENDING

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-NOTES-

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Chapter 7

An Interview with Dr. Robert Strecker

THE next morning, I tried contacting Strecker again. First I dialed what I thought was his published telephone number. Again, it rang continuously unanswered. Then I called the number directory assistance had given me for Dr. William Campbell Douglass, a physician from Clayton, Georgia, who had published an article entitled "WHO Murdered Africa," which supported Strecker's theory. As in past attempts, a machine instructed me to leave a message.

"Is there anyone there!? This is about the sixth time I've called. I've been trying to reach you for months. I'm trying to reach Dr. William Douglass. I need to get in touch with Dr. Robert Strecker. My name is Dr. Len Horowitz, and this is an emergency. If anyone can answer, would you please return my call?" I then left my 800 number and hung up.'

Two days later I received a call from a Mr. William Douglass. I was delighted. He immediately informed me, however, that he was not the person I sought.

"I've been getting a couple of calls a month for Dr. Strecker, so I finally decided to get his number. If you like, I can give it to you."

"Please. I would really appreciate it."

Finally! I thought as I quickly dialed the magic numbers, feeling the end of my frustration might be near.

"Hello, this is Dr. Strecker's office," a woman's kindly voice answered.

Following a lengthy introduction, the woman informed me that Dr. Strecker was indeed alive, well, and practicing internal medicine in Needles, California. He was busy seeing patients, I was told, but I was assured he would return my call that evening. "All right!" I affirmed as I hung up the phone. Then I quickly relayed the good news to Jackie.

The information on Strecker's whereabouts immediately helped to ease her concerns.

On the Line

That night, Robert Strecker returned my call with news about his ongoing crusade to bring the "truth to light." We spoke at length about our independent investigations, immediately developing the warm rapport that two black sheep isolated from the establishment's scientific flock might.

Pondering safety, I asked, "Has anyone from the government ever bothered you over all these years?"

"Not really," he replied. "Since the suspicious deaths of my brother and Representative Huff, [1] I've just gone about my

business. There was one incident though that occurred shortly after I sent reports of my findings to all the health and intelligence agencies."

"What happened?"

"Well, first, the CIA warned all agencies that I was a communist and told them not to take anything I said seriously. My brother Ted obtained a copy of the release they sent out through the Freedom of Information Act. Their counterintelligence efforts apparently worked."

"Do you still have a copy of the release?"

"I wish I did," Strecker replied. "It disappeared along with a lot of other records Ted and I had collected. Shortly after Ted's death, my office was burglarized."

"Interesting," I said. "Who do you think did it?"

"I believe it was the CIA, but I obviously can't prove it."

Following an illuminating conversation, Robert - as he preferred to be called - and I agreed to mail each other copies of our previous publications. He would send me a copy of 'The Strecker Memorandum,' which I still had not viewed, and I would send him 'Deadly Innocence,' which he had not heard about.

Then we also agreed to exchange interviews. I set up a time to be a guest on "He Said/She Said," a radio program Strecker co-hosted with Betsy Prior on KGER-AM, Los Angeles, and he agreed to be interviewed for this book.

The Strecker Interview

Several weeks went by before we could coordinate our schedules for my telephone interview with Strecker. By this time, I had watched 'The Strecker Memorandum,' and considered, as Acer had, Strecker's position that AIDS had been "predicted, requested, created, and deployed."

Strecker, I now knew, was a stocky, earnest-looking man in his late 40s or early 50s. His dark blond hair glistened as he spoke. His wire-rimmed glasses and slightly graying temples portrayed a more mature, intelligent, demeanor than what his boyish face disguised. He spoke quickly and easily, accompanied by an unmistakable Midwestern drawl. He appeared to me to be a once all American, football hero type, whose athleticism and idealism was quickly dashed by the nature of medical education and academic politics.

I began the interview by reading from a list of questions I had prepared for Robert to answer:

LEN: Robert, first off, what convinced you that the AIDS virus was synthetically manufactured?

ROBERT: What convinced us [The Strecker Group] was the fact that this new agent had suddenly appeared out of nowhere. That the virus had characteristics of animal viruses more so than

human viruses, and that the genetic structure of the AIDS virus actually looked like the viruses that appeared in animals that would not normally adapt themselves in humans. . . .

That could have occurred spontaneously, but not by the process that scientists have normally talked about. For instance, not by the virus running in primates [the highest order of mammals, including man, monkeys, and lemurs] because if you look at the genetic structure of the AIDS virus, what you find is that the codon choices [the specific sequence of three (purine and pyrimidine) bases in the viral RNA that codes for the production of a specific amino acid by the infected cell] included in the AIDS virus are not existent in primate genes.

Therefore, to assume that they simply mutated in order to adapt themselves into primates in the case of AIDS is vanishingly small although still possible. What happened is that the virus either mutated in cattle and sheep, and then was artificially adapted to humans by growing in human tissue cultures, which they [virologists] do and in which they are easily manipulated in that manner - or the virus was actually constructed in a laboratory by gene manipulation, which was available to scientists in the early '70s although many of the techniques were not talked about until the mid '70s, because the biowarfare laboratories throughout the world have always been about five to ten years ahead of other laboratories working on all kinds of projects.

In addition, a clearer reason is, if you look at the appearance of the 'human retroviruses,' the fact is that there were a host of these things that appeared all at the same time. So, you have to explain not only the appearance of HIV-I, but also HIV-II, HTLV-I, NTLV-II, HTLV-IV, HTLV-V, HTLV-VI, ad nauseam.

And so, to say that these things all spontaneously mutated at the same time in nature, and in the same direction, to infect human beings spontaneously and spread disease in worldwide epidemic proportions, in my opinion, is absurd compared to the known fact that scientists were working with exact progenitors of these viruses in their laboratories, which we can document.

The Green Monkey Theory

LEN: But what about the green monkey theory - the theory that a green monkey bit an African or someone had sex with an ape?

ROBERT: That's just nonsense. . . . Green monkeys are about the size of chickens. So the idea of a human having sex with a female monkey the size of a chicken is, of course, absurd.

In addition, the theory that a transmission occurred through biting, of course, is always said to be close to impossible. If you look at the CDC and everybody else, they say that biting is not an easy way to spread these diseases except in the case of the purported green monkey which is suddenly the way it was spread. [2]

We don't believe that the viruses came from primates or from green monkeys. In addition, if you look at the whole theory that was published in Rolling Stone. . . which accused Wistar Institute of spreading AIDS to Africa in the polio vaccines of the early 1960s; Wistar, of course, says that they have now reviewed all their stocks [without finding any incriminating evidence for the allegation]. . . . Wistar Institute is one of the world's biological leaders in 'retrovirus, virus, and cancer causation, cancer research,' [and is] located in Philadelphia. [3]

And these viruses were originally known by their Philadelphia names. They were called 'NBC' for New Bolton Center, which is also in Philadelphia. And if you look up the original AIDS virus, in our opinion, that goes back to cattle viruses that were called NBC, New Bolton Center I through about XIV or XVI. [4]

And we identified HLTV-I and HLTV-II and HLTV-III in those first cultures that were adapted to human beings by growing them in human tissue culture. . . . For many years actually, you could simply call up New Bolton and say, "Give me some NBC-XIII." And they would send it to you. And then when AIDS appeared around 1978 or so, all of a sudden the NBC line all disappeared. You could no longer order them.

LEN: How interesting.

The Cow Theory

ROBERT: Yeah. It is interesting. And so we tracked NBC, I think it's [NBC-] XIII . . . back to Louisiana State Agriculture Farm (LSAF) cow BFC-44. And what happens was you see, they were looking a lot at HLTV-I, which is like bovine leukemia virus (BLV), [5] and this cow at the LSAF got they thought a BLV infection. She got huge lymph nodes in the neck just like HLTVV-I/BLV in cattle. And then she apparently conquered it because the lymph nodes went down; she got better after a mononucleosis-like disease, and she made lots and lots and lots of antibodies against this virus.

Then about five or six years later, she started losing weight rapidly, developed diarrhea, and died with pneumonia. And they autopsied her and of course she had no immune system left. And as far as we can tell, that was the original bovine visna virus isolate.

LEN: What year was that?

ROBERT: 1969. And that virus was capable of wiping out T-cells selectively, it produced syncytium [a mass of cell fluids containing many cell nuclei formed by the joining of originally separate cells as a result of infection or disease] [6] in tissue culture, and it does everything that AIDS does.

LEN: Now, who was studying that?

ROBERT: That was isolated from the LSAF outside of New Orleans.

LEN: So Gallo wasn't the only one studying that virus?

ROBERT: No, everybody was. These [cultures] were [widely distributed]. If you go back and look at the veterinary literature, they were looking at all the BLV, bovine leukemia virus lines, bovine syncytium viruses, and bovine visna viruses. And all these things were being studied. . . .

Well, at this point, they were still essentially noninvasive because they were restricted to animals. But, then what happened was in the late '60s and early '70s they started growing these in human tissue. Early Researchers

LEN: Now when you say 'they,' can you be more specific in terms of the labs that you're familiar with that were doing this work?

ROBERT: Yeah, well virtually every lab in the world that was doing sophisticated lymphocyte studies. But particularly Gallo and company at the NIH, ahh . . . ahh . . . actually there were only a few guys you know - Gallo, Montagnier, a couple of guys that are dead, Baltimore, [7] Teman, [8] and a few others and a few veterinarians. . . . Dmochowski was interesting because he was the first one to show that you could basically adapt retroviruses to different mammalian species by growing them in the tissue cultures that you wanted them to go to. Now he's down in Texas. [9]

Miller, in 1969, took bovine leukemia virus and injected it into chimpanzees, and the chimpanzees formed antibodies against the virus. [10] So they concluded that these chimpanzees were immune. And so that was the decision for telling everybody that bovine viruses in human beings posed no threat; which is relatively true, there is a species barrier.

Since the 1950s and even the 1940s Bumy, [11] Bobrow, [12] and all these guys from Europe said these [bovine] viruses posed a threat to humans, so they began a whole program of mass extermination of cattle in Europe that carried BLV and other viruses. [13]

In this country, half of our herds are infected with BLV, BFC, or BVV, and the only thing that has prevented, in my opinion, everyone from dying of T-cell leukemia is the fact that pasteurization of the milk kills viruses.

Now if you look at the distribution of T-cell leukemia across the upper United States, from like Minnesota to Wisconsin, there's a huge incidence of T-cell leukemia in dairy farmers. And if you actually look at some of the studies done in France, they found that guys working in meat-packing plants had a greater incidence

of T-cell leukemia too. [13]

So there's all this evidence that T-cell leukemia is related to BLV, which it certainly is, [and] for sure, if you culture the virus in human tissue and adapt it, what you get [is an HTLV-I-like virus that thrives in humans]. . . .

If you look at BVV, bovine visna virus, [13] . . . it's very closely related [to HIV], but it's still not there; it's not the same as AIDS because what you have is bovine visna virus - a virus growing in cattle - and that's not adapted to humans yet. To adapt it to humans, you've got to grow it in human tissue, as they were doing in those early '70s. And what they discovered was that it was a selective T-cell destroyer [just as the AIDS virus is].

French/American "Bull"

ROBERT: Do you know what the true conflict [was] that occurred between Gallo and Montagnier?

LEN: The one that I'm aware of was that Montagnier allegedly gave him what he thought was the virus, and Gallo supposedly cloned it.

ROBERT: That was all bull. . . . Because they both had the viruses growing in their labs in the early 1970s. The real problem was, and what happens is - suppose you take a culture of lymphocytes, you take T-cell lymphocytes and you dump in HTLV-I or II. What happens to the T-lymphocyte culture?

LEN: It gets infected, and it proliferates.

ROBERT: That's exactly what happens. The tissue grows and grows and grows in human beings. That's what results in leukemia. You have to take the cells out; they get so packed that the tissue culture dies.

Now what happens when you dump bovine visna or AIDS virus into the same tissue cultures?

LEN: The cells don't grow.

ROBERT: Exactly! They're lysed. They die. So when you come back in a day or two and look, there's nothing left except debris. And so Gallo couldn't figure out how to make enough virus for the antibody tests. They needed virus in quantities to get everything going. And they couldn't get them to reproduce long enough to get large quantities of virus.

[I felt the urge to interrupt Strecker at this point since I had questioned this same allegation before when Randy Shilts advanced it in 'The Band.' Instead, I remained silent, heeding my

father's recommendation that I could, "learn more from listening than speaking."]

ROBERT: So that's the real argument. And what Montagnier figured out was if you dump in Epstein-Barr virus on to the T-lymphocytes, you immortalize them. . . . They will just sit there and make virus for you, which is why if you have an Epstein-Barr virus infection on top of an AIDS virus infection you're in sorry, sorry shape. . . . The immortalized Epstein-Barr-virus-infected T-cells will just churn out AIDS viruses day after day after day. . . . And so that was the real thing that Montagnier discovered. . . . [14]

LEN: And that's not published anywhere?

ROBERT: Oh sure it's published. But it's the true argument versus the suspicious argument that, "You stole my virus." That's all a lot of bull because they both had the virus, and they both knew what they were doing from day one in my opinion.

[If that was true, I considered, then Gallo would have also known about the Epstein-Barr virus effects, which I recalled he also published. [14] So I questioned Strecker:]

LEN: Now when I look back at the research literature, at least in the Index Medicus, Montagnier did not have too many publications in this field [in the early 1970s], whereas Gallo had been churning out the publications.

ROBERT: Except that Montagnier had worked with Gallo! [15]

LEN: They did?

ROBERT: Yeah, they were in the same [building] or on the same hallway.

LEN: At the NCI?

ROBERT: Yes! . . . Montagnier was over here. . . around 1965 or so; he and Gallo were working together. . . . They're all connected.

LEN: Interesting.

[I had not considered the possibility that Gallo and Montagnier had known about each other's work prior to 1978 as Shilts documented.]

ROBERT: And then when. . . Donald Francis and what's his name? When they published that cat house experiment, and questioned, "Is it possible that there's a human retrovirus similar

to this one." Of course [there was]! Gallo had already isolated HTLV-III. . . . And his office was only twenty-five feet away.

[I sat up on the edge of my seat taken by the allegation. 'The Band' presented Francis as somewhat of a hero during his alleged conflict with Gallo and other NCI administrators over withholding support for AIDS research. I suspected he knew about Gallo's early research, and Strecker was now alleging the same.]

LEN: You mean Don Francis from the CDC? Francis was originally at the NCI before he went to the CDC?

ROBERT: Yes. . . . He was working there right next to Gallo. And that's when they did their famous cat house experiments showing that the cats were transferring the viruses back and forth amongst themselves. And then they wrote this article that said, "It is possible. . ." [16]

I mean, they knew or else they didn't talk for the whole time. They knew that there was a similar virus out there growing in human beings. . . . Gallo had already isolated it, and their labs were twenty-five feet apart.

LEN: Now what I seem to have dug up in the 'WHO Chronicle,' is that the first American laboratory to be sent any of the viral strains from which they began was the NCI [17]

ROBERT: Yeah. Well, I think that's a lie. I mean, I think the viruses were growing in the basement of the NCI all along. . . . Do you know about the meeting between Gallo, Montagnier, and Salk?

LEN: No.

ROBERT: Oh my God! Anyway, a year or two ago, and this is documented in 'Science' or somewhere, Gallo, Montagnier, and Salk met in San Diego to write up the history - the official history - of their discoveries. [18]

LEN: Salk? The polio virus Salk?

ROBERT: Yeah, they met down there and made up a story. . . . And I personally believe that virtually everything they wrote was bull. . . . We [referring again to his brother and other colleagues in The Strecker Group] understood that they used to meet like two or three times a week and decide what to tell next - how to package it, how to discuss it. In other words, they already knew everything because they'd been working on it since the early 1970s. They basically knew they had the same stuff [retroviruses and reagents] because if you look at what happened, their discoveries were too quick. . . .

LEN: OK. Explain this now. Why did Gallo in 1980 become so frustrated that he couldn't keep the [T-lymph] cells alive, so allegedly he quit.

ROBERT: What?

LEN: According to Shilts, Gallo dropped out of the AIDS race for about two years.

ROBERT: I don't believe that either. I don't know what he was doing in that time frame, but he was still working on AIDS; there's no doubt about that.

LEN: According to Shilts, Gallo had only about 10 percent of his lab going on the AIDS problem. He said that Gallo stonewalled researchers throughout the world [by] not providing the antibodies, not providing the cell lines that were required to identify and cultivate the virus.

ROBERT: Yeah. . . . Why would they want to give things away when they knew what was going on already, and it was a matter of Gallo and Montagnier deciding who was going to tell what when. . . . Do you know the story about the patent? [19]

LEN: Gallo ripped Montagnier off.

ROBERT: Yeah. That's what brought the split. You see we [the United States] tried to take all the money.

LEN: Well, that's what they've done.

ROBERT: Yes. Yes. Yes. So that's what got the French so angry. And what was Montagnier going to do? Come out and say, "Well, we lied. We've been doing this work all along. We're all crooks."

So that's, in my opinion, what happened. Anybody with any scientific credibility knew that Gallo stole the virus if that's what they were talking about because they [HLTV-III and LAV] were identical. . . . But I think that the big war was really a war over money.

LEN: Oh, for sure.

ROBERT: Yeah. Anybody with any sense knew; I mean retrovirologists laugh about it because they knew that Gallo stole it. It was only the press that was blind.

LEN: But how do YOU reconcile the first comment that they all had these things and then later that he [Gallo] cloned it [Montagnier's LAV]?

ROBERT: They had them, and you can grow the virus in perpetuity if you keep constantly changing their cell line as it kills it. That doesn't mean you can grow it in any quantity. In other words, every lab in the world - and these were all over the world, they weren't just here and in France; they were in Germany and Russia and everywhere - [and] a lot of people had the [human] cell lines, and they had the cattle cell lines [in the early 1970s]. . . . And we know they had, in 1976, BVV, bovine visna virus, growing in brain tissue in Brussels because we have papers on that. One paper said that the AIDS[-like] virus would infect [human] brain tissue. And the guy even wrote, "Is it possible that this is a cause of slow virus disease of man?" [20] So, I mean, they were everywhere.

The "Conspiracy of Cells"

ROBERT: Plus, they were growing in cattle naturally, and we were using fetal calf serum as growth medium for every cell culture in the world. . . . The theory was that since these were extracted from fetuses, they were sterile, but in fact, they weren't. Because the AIDS virus and BLV-I and II were being transferred in the gene lines. And so they were potentially transferring these viruses into every tissue culture throughout the world. . . . So it gets very mixed up. You've got to read a book called 'Conspiracy of Cells,' by Michael Gold. [21] This is a story about Walter Nelson Reese who worked in the highest containment laboratory in the NIH - the BSL 4 lab. That's where they keep their tissue cultures, and they had like 300 to 400 of them. And in 1981, Walter Nelson Reese published a paper [in 'Science'] saying that over a third of them were Henrietta-Lack-cell-contaminated cell lines.

Henrietta Lack was a black lady who worked at Hopkins in the late 1950s. She died around 1965 or so while she was still working there. . . [from] a tumor of the uterus that literally ate her alive. And that tissue was the first human tissue that was grown in perpetuity in tissue cultures. Because up till then, they would only grow one or two divisions and then die, and her tissue called HELA - that's where HELA comes from, Henrietta Lack - was the first [cancer cells] that would grow in tissue cultures. Now those cell lines were sent all over the world, and what happened was that scientists were contaminating their tissue culture cells with HELA accidentally. And in the early 1970s, I think '72 under Nixon, the Russians sent us six cell lines that they thought contained human cancer-causing viruses. And those were sent to Walter Nelson Reese who was the keeper of the cell lines in the United States. He was in San Francisco, and it was his job to keep the cell lines straight and not contaminate them. That was [during] the great "war on cancer," that's where all this stuff came from. The NIH was funded in '72 with billions of dollars to find

the cancer virus. . . . Nixon was trying to steal the show from [Teddy] Kennedy by coming up with a virus and vaccine against cancer. They said, "Let's find a virus." So that's where the big cancer virus hypothesis came from.

Now when we got these six cell lines from the Russians. . . Reese started looking at them and discovered that they were all female; then he discovered that they were all black. And so he questioned, 'How many black females are there in Moscow who have cancer?' And, of course, what he discovered was that these were all Henrietta Lack cell contaminants that contained monkey viruses. And so all that stuff the Russians sent us was in fact a fraud. But. . . it was a very embarrassing thing because they thought they had got there first, and what we proved was that they were awful scientists.

So then what Walter Nelson Reese did is that he started looking at all the cell lines of the United States, and closely. And [then he] discovered that at the NIH, over a third of them were HELA contaminated.

What happened was that when they would open their tissue culture lids, they would aerosolize small particles into the air. They would float around and drop into another cell line, and HELA's so aggressive that it will literally take over. And so it just takes one cell to drop into another cell line and it takes over, and it amalgamates, and those were called HELA contaminated. And so what the NIH did to him [Dr. Reese] was, of course, defunded him and put him out of business. Because he proved they were all a bunch of idiots.

LEN: Oh - I see.

ROBERT: So then the problem was you had a whole bunch of HELA-contaminated cell lines floating around and being sent out as clean cell lines and they weren't; they were actually human cancer malignant cell lines, and some of them contained viruses that were from other species.

And so it represented a big problem. Plus, they were throwing in fetal calf serum which was contaminated with these bovine viruses.

So you had a mixture for a natural [disaster]. I mean, the thing is, like they said in the '72 conferences, it's a wonder that we don't have worse disasters. You just wonder why we haven't been annihilated by these idiots.

If, for instance, you look at the tissue cell culture that was used to determine x-ray tolerance of human tissue, it turns out it's a HELA-contaminated cell line. Which means the most radiation-resistant cell line in the world is used as the standard to determine how much radiation a human should be exposed to!

LEN: Unreal.

ROBERT: Well, that's all documented in 'Conspiracy of Cells' by

Michael Gold. . . Walter Nelson Reese now runs an art gallery.
They put him out of business. . . .

The "Patient Zero" Theory

LEN: All right, let's get back. . . to the situation with AIDS. What about the "patient zero theory?"

ROBERT: That's nonsense. First off, this guy lived in Canada and flew primarily in Canadian cities, yet you must propose that he only had sex in American cities because the disease broke out in specific American cities where he allegedly had sex. In addition, it doesn't make any sense if you look at the time frame. AIDS broke out in '78 in Manhattan and then in '80 in San Francisco. It didn't break out in Montreal in '79, or in Toronto, in Quebec, or Ontario in '80, whatever. It broke out in select cities in the United States in a select time frame which corresponds exactly to the hepatitis B study. [22]

LEN: OK. Let's talk about that study for a minute. If you could conceive of a way that vaccine could have been contaminated, how could it have happened?

ROBERT: Two ways. One way accidentally and one way intentionally.

LEN: All right then, elaborate. . . .

ROBERT: Well the vaccine was prepared from gays first off, and then it had plasma expanders that came from cattle added to it.

LEN: So the hepatitis B vaccine is produced through the bovine serum.

ROBERT: Yes. . . . It had expanders put into it as a mechanism of production.

LEN: Like serum?

ROBERT: Yeah, serum. . . . Because they needed to expand the volume.

LEN: Now is the vaccine produced in cow carcasses?

ROBERT: No, it's made from humans.

LEN: The hepatitis B vaccine [is made] from the gay men's serum?

ROBERT: And also from straight men's serum.

LEN: OK.

ROBERT: And. . . that's the most interesting thing. Why did they make two separate vaccines?

LEN: Yeah. Why?

ROBERT: Because the epitopes [23] [surface molecules] of hepatitis B [antigens] in gays was different than in straights. . . . So what does that tell you?

LEN: I'm not quite sure.

ROBERT: Well it tells you there's not a lot of exchange going on between the two pools. Because if there were, the hepatitis B would not have separated into two epitopes. So if there was a lot of exchange, the information would have been heterogeneous in the pools, not homogeneous and not different [between homosexual and heterosexual men]. Now suppose you introduce a virus which is transferred like hepatitis B into the gay pool or population. When will it show up in the heterosexual pool?

LEN: I don't know. When?

ROBERT: Well it will take it a long time to show up there, because what you know is that the exchange of information going on between homosexuals and heterosexuals is limited. So Szmunn was the guy who conducted that study. [22] Szmunn came from Poland, and was educated in Moscow. He somehow managed to escape [from Poland] to the United States with his family in tow, and ended up in New York City. . . . as the head of the New York City Blood Bank.

[That is interesting, I thought as I reflected on my recent tour of the National Holocaust Museum in Washington. The Nazis, I learned, had done extensive blood and genetics research in an effort to discriminate and exterminate mixed breeds from their racist and white supremacist world. A Russian-educated Polish researcher with Szmunn's credentials could have best survived Nazi-occupied Poland by joining the Nazi's research effort, or post-Nazi Poland by serving Russia. How did he end up in the United States? I wondered if there was a link between the Nazi effort to exterminate homosexuals and Szmunn's study that targeted gays with allegedly tainted hepatitis B vaccines? The Gennan-owned Merck Company, after all, funded the study and produced the experimental and control vaccines] [22]

LEN: So [still somewhat perplexed, I asked,] that's the theory of

unintentional infection?

ROBERT: Well, the fact is that the vaccine could have been prepared in a way that unintentionally infected them. Yes. [But] it might have been intentionally contaminated by somebody [also]. . . . They may have been testing gays trying to develop an immunity against something they knew was already ripping through Africa. . . . It could be that they were testing it just to test it, or it could be that somebody intentionally was trying to extenninate gays, or in our opinion, it could be that their actual goal was to exterminate the United States. Strecker's latter remark took me by surprise. It was the first thing he said which to me made no sense.

LEN: The actual goal was to try to exterminate the United States? And that's one of your most plausible explanations?

ROBERT: Yes.

LEN: And who would have been behind that?

ROBERT: Some foreign party. The Russians or someone who didn't like us. Because the Russians have talked about that for fifty years. There have been KGB biological warfare experts that have been trying to do that to us for fifty years.

[I felt intuitively uncomfortable with Strecker's explanation. I recalled his comments about Walter Nelson Reese which proved the Soviets knew far less about viral biotechnology than American researchers. Moreover, it seemed farfetched to believe the Russians had somehow managed to infiltrate the New York City Blood Center which appeared to be the starting point for the AIDS epidemic in America. This part of Strecker's theory would have required Szmunes, or one of his associates, to have been a secret agent working for Russia.]

LEN: OK, but why would they have started with gays?

ROBERT: For a very obvious reason. And that is because nothing would be done. Just think about this. Suppose you put this virus in the heterosexuals or kids. What kind of response would have occurred compared to the response that did occur?

LEN: Right. That's for sure. Quite different. I appreciate that, but still, even to this day, the heterosexual spread is limited compared to the spread in the gay population.

ROBERT: Only in this country.

LEN: Right.

ROBERT: If you look in the world, what percentage of the world's AIDS cases are heterosexuals?

LEN: Ninety percent.

ROBERT: Over 90 percent. Right. Exactly. . . It's only in this country that you have this strange, unexplained predominance of homosexuals. Now, that's why you have to remember what I just told you. What happens when you put a virus that is transferred like hepatitis B into the homosexuals? When does it appear in heterosexuals?

LEN: Not for a long time.

ROBERT: Exactly. . . [That's why] I think it was pure genius. Now people say, "Well nobody would think of that." And my answer to that is: "Well, I thought of it. So why couldn't they think of it?"

LEN: I still like my theory better.

[Problems with the 'communist theory' flooded my head. Strecker noted the Russians were way behind us in viral research. How would the Russians have gained access to the viruses in Gallo's or Merck's labs in the first place. Even if Szmuness had been a Russian agent, he would have needed to gain access to the viruses first in order to contaminate the vaccines. Also, had the Russians created AIDS-like viruses shortly after Gallo surely did, then why had Gallo become the world's preeminent retrovirologist and not some Russian? Also the patents are worth millions. Why would the United States and not Russia hold the patents on the AIDS virus antibodies and cell lines?]

ROBERT: Yeah. I mean I don't have the answer. I'm just telling you my theory.

African Vaccine Trials

LEN: OK. So that's the intentional theory.

ROBERT: Yeah. It could've been an experiment. It could've been intentional to get rid of gays. It could've been intentional to infect all of us.

LEN: OK.

ROBERT: And you see what happened. In our opinion, IARC, the International Agency for Research on Cancer, took these viruses to Africa in the early 1970s and tested them. Because we think

they were trying to get the virus/cancer hypothesis proved; they wanted to develop a vaccine, and they wanted to find out which of those [viruses] were actually causing cancer because they weren't sure. [24]

So how do you prove it. How do you prove Koch's postulates [25] in the case of virus and cancer?

LEN: Difficult.

ROBERT: Yeah. You've got to test them.

LEN: Right.

ROBERT: It's like saying because you have lung cancer in women; it's because they wear hose. That doesn't prove anything. You've got to have causation. So they were stuck.

Now that's what was said in our references. They said, "let's test it; let's test it in humans with the same degree of sophisticated experiments that we use in animals." What does that mean? And then they published their test sites. And the test sites are exactly where AIDS is. We had these huge laboratories over there. [24]

LEN: And what year was that?

ROBERT: 1972, I think. . . . It says that epidemiological studies are of no use per se. So what do you conclude?

LEN: That they're going to have to test it in a population.

ROBERT: Exactly. And then it says we're going to test these things in sibships - brothers and sisters from the same family. And they were going to study the time course of the infection. And then we said, well, what do you mean by that? And they said, well, we're gonna study the antibody response. And I said, well you already knew the antibody response. How could there be any time course to that. The only thing that a time course could refer to is an infection. Which means you had to have active particles. That's all in the references, [26] Anyway in 1972 they said, let's make a T-cell destroyer. That's out of the bulletin of the WHO.

LEN: That I know.

ROBERT: The same year, they said let's test it, and then let's inject it. And then they published their test sites which is a map of Africa where they have all their test sites, and that corresponds exactly to the outbreak of AIDS.

LEN: Do you have those maps anywhere?

ROBERT: They're in the references [we published]. [26] They're also in the Federal Register. . . .
So we think that they went over there and tested it. . . . Then somebody put it back into us or simply used it in us.

[Again, I thought, it makes more sense to place the source of the experimental AIDS viruses in Bethesda and not Russia given that the WHO had made the NCI, and not a Russian institution, the initial distributor of viral testing reagents [27-29] And since the initial homosexual outbreak of AIDS was in New York, Szmuness and his New York colleagues along with Merck researchers seemed to be the prime suspects. Then I wondered whether there were any documented links between Gallo's group and Szmuness?]

Manufacturing AIDS-Like Viruses

LEN: OK. Now let's get a little bit more specific about the virus itself. With regard to the AIDS virus, had it been specifically manufactured, what might have been the first steps? What do you think the researchers began with?

ROBERT: I think they began with bovine visna virus, which they knew was a T-cell destroyer. And they made that by crossing bovine and visna [viruses] in cattle. . . .
Visna is the virus in sheep. Its characteristic is a destroyer, and they wanted a T-cell destroyer. So they took a T-cell attacker-the bovine leukemia virus and crossed it with a visna to make a T-cell destroyer, which is exactly what they got. But then all they had was a T-cell destroyer in cattle which wasn't very good for humans. So then they grew it in human tissue, and when you do that it adapts to human beings (see fig. 7.1). And there are a host of ways to get these things to grow in tissue even if the receptors won't take [the virus]. . . .

LEN: They could have delivered the viral RNA a number of ways.

ROBERT: Yes. One of the ways is by pseudovirus formation. . . . Pseudovirus formation is where you put in a simultaneous mixture of cells and viruses, and what happens is, for instance, if you put bovine and visna viruses in with herpes virus; in the packaging process, you'll get BVV genome inside a herpes coat and visa versa.
So then you separate out all the herpes ones, and it just infects any cells which are sensitive to herpes. And you can artificially introduce BVV into a herpes-sensitive cell, because it has BVV on the inside and herpes on the outside.

LEN: I remember reading through studies about that technique

being used.

ROBERT: Yeah. Another way is you treat 'em with heat, and they open up. Or you can use some detergents that will open them up, or there's a host of different things; even some viruses will tend to open them up. It makes the cells permeable even though they normally wouldn't be, so you can introduce the one you want to get in even though there's no real receptor for it.

LEN: OK. So it could've been bovine visna virus, BVV, but also there was some speculation it could have been scrapie, another sheep virus, right?

ROBERT: Yeah, well. . . . Scrapie's a little bit different than visna, but basically I don't think scrapie's a retrovirus. It's like it, but it's not the culprit.

LEN: During our first conversation, you also mentioned, like other researchers, you could actually take a look at the AIDS virus, and it looks like it's been spliced in particular regions.

ROBERT: Oh yes. Actually, looking at it was one of the first things that told us what it was because BVV and AIDS, of course, look identical, and there weren't that many 'D-type' retroviruses. There were only a few.

The 'D-type' are cylindrical-shaped retroviruses which of course BVV and AIDS are identical. Besides the fact that they were both magnesium dependent and were T-cell attackers that would produce syncytium and could wipe out cells.

And then what you do is look at the genome. Actually, a paper by Gallo published in 'Science' I think about '83, or '86, said he took the restriction endonucleases [scissor-like enzymes] and treated the virus, and showed that when the virus falls apart, that where it falls apart are exactly at the gene lines.

In other words, it manages to fall apart just at the places where they could have constructed it.

LEN: Is that right? Just where the foreign pieces might have come together?

ROBERT: Yes, it falls apart in ten or twelve places. . . because those endonucleases cut at specific points.

But, what's interesting is . . . if it occurred spontaneously [in nature], why would it fall apart exactly where the genes occurred - the gag, pol, envelope, the tat genes? [30] Everything sort of cuts apart just the way you would put it together if you were constructing it. . . . [This] we thought [was] the strongest piece of evidence that would have said they actually put it together entirely in a lab.

LEN: And how might they have done that then? Let's say they

started with BVV.

ROBERT: Well, in this case if you start with BVV, you just manipulate it to grow it in human tissue to adapt it to humans. If you started with BLV and visna, you would. . . take the viruses, cut them up [with enzymes], then chromatograph them so that they're homologous. That is, the ten different parts [separate], then you take each different part that you want uniquely and put it together with other parts and zip' em up.

LEN: And how do they 'zip 'em up' or combine them?

ROBERT: They have enzymes that sow them back up just like they've got ones which cut' em apart. These are repair enzymes.

LEN: Then they separate those particular viruses, and they put them into cells?

ROBERT: They put them into serum. . . [add] your enzymes and [other] parts and wait for awhile. And then throw [everything] . . . into a culture and see what happens."

[I was still a bit fuzzy.]

ROBERT: But you see that's work. You don't have to do that. Nature does it all for you. All you do is take a cow and simultaneously inject bovine in one hip and visna in the other, and the cow is your mixer. And it will do it for you automatically. Because what happens is the viruses are so unstable that they will recombine and produce every thermodynamically stable recombinant possible.

LEN: Interesting. It's unbelievable.

ROBERT: Yeah. You see that's why everybody says, "We didn't make these viruses! We didn't have the techniques."

LEN: That's nonsense.

ROBERT: Right. That's bull too, but, of course, our answer is: "Well. . . the virus makes itself." So you don't even have to implicate them for the genetic [engineering] viewpoint, if you don't want to.

[Strecker then provided a unique, common sense, metaphor for the emergence of HIV.]

ROBERT: It's like saying you've got a baby with no arms and legs and somebody dressed it up and took it to a party in Beverly Hills. Well, it sure couldn't do that and get there by itself!

Fig 7.1 - Theoretic Manufacture of AIDS-Like Viruses From Bovine leukemia and Shee Visna Viruses:

PENDING

Diagram depicts the theoretic manufacture of AIDS-like viruses according to Roben Strecker, M.D., Ph.D., beginning with the bovine leukemia virus and sheep visna virus. Suppon for this theory was presented by Fort Detrick, NCI researchers Gonda MA, Braun MJ, Caner SG, Kost TA, Bess Jr JW, Arhur LO, and VanDer Maaten MJ. Characterization and molecular cloning of a bovine lentivirus related to human immunodeficiency virus. Nature 1987;330, 388-391.

Evidence Against Simians

LEN: What about simian monkey viruses? Why do they have scientists throughout the world claiming HIV is a simian monkey type of virus?

ROBERT: Because they get money for that. You know. . . Here. . . send more money. Let me tell you about the simian AIDS virus.

First off, how does simian AIDS virus work? It produces a protein that causes AIDS in simians, and it's very easy to make a vaccine against a protein. And that's actually a derivative of the Mason Phizer monkey virus, which is another laboratory creation. . . another man-made virus made in the lab which was a simian virus that was being used for various things. It will cause AIDS in apes, but it doesn't do it [like HIV]; it does it by making a protein that wipes out their immune system.

LEN: Is it also a specific T-cell destroyer?

ROBERT: No. . . The virus produces a protein, and the protein messes up the immune system. And it's very easy to make a vaccine against a protein. But AIDS works entirely differently. It wipes out the T-cells and works inside of macrophages. . . It inhibits the processing plant. AIDS is really a problem of macrophages, not of lymphocytes. . . The virus makes the macrophage dysfunction.

What really is supposed to happen is that the macrophage is supposed to chop up the virus and present it to the T4 cell [thymus-derived cells] for the production of delayed immunity, and then to the B [bone-marrow-derived] cell for antibodies. But what happens is that the macrophage can't process it.

LEN: OK. So what happens then?

ROBERT: They run around the body and inject it into other cells. That's how the virus gets into other cells. That's how the virus gets into cells that don't have receptors for it.

LEN: So the macrophage actually reproduces the virus and then distributes it?

ROBERT: Yes. That's exactly what happens. That's how it gets into the brain. It's carried across the blood-brain barrier by macrophages that then inject it into brain cells.

LEN: Because T4lymphocytes don't cross the barrier?

ROBERT: Yeah, they do, but they don't inject it. . . . They don't have sex with cells, whereas the macrophages do. And also the viruses are bigger than the pores of the membranes, so they can't get across directly. So something has to carry it.

Strecker's Colleagues

LEN: Now let's discuss some of your colleagues. Others have reported similar findings to yours. During our first conversation, we talked briefly about John Seale. [31] What do you know about his work?

ROBERT: Seale started writing about AIDS in '81 or so, even before us, and he was the first guy to say AIDS was not a venereal disease, and that it appeared to be artificial and spreading in an unusual manner, which was really just looking at the fact that the virus appeared in different areas of the world at the same time.

ROBERT: By the way, do you know the story of Parvo II?

LEN: No.

ROBERT: Parvo-II virus is a dog virus that appeared simultaneously around the world at the same time and proceeded to kill hundreds of millions of dogs. How does a virus appear in Australia, Europe, and Asia all at the same time?"

LEN: American Airlines.

ROBERT: Right. American Airlines.

[We both laughed.]

ROBERT: OK. And then instead of spreading contiguously [from one dog to another], the viruses were spreading and popped up [in different areas around the world] as if directed mutations had occurred [and been delivered by humans].

And Parvo II was eventually proven by genetic techniques to be feline panleukopenic virus which had contaminated dog vaccines. [32]

So Seale was observing the same thing with AIDS. How was this virus appearing at different spots in the world at the same time in a sense without any contiguous spread? I mean, even if you look at the gay [transmission] theory [if AIDS started in Africa, Haiti, Paris, and then New York], why wasn't there AIDS in Miami, or New Orleans, or Dallas. I mean those guys were going to Haiti [New York, Africa, and Paris] far more than the gays from San Francisco. I mean none of this theory makes any sense! Then Segal began to write the same thing.

LEN: Jacabo Segal, from Humboldt University in Berlin? [33]

ROBERT: Yes. He was at the Institute of Biology in East Berlin. He was writing the same stuff, but again, he thought that the virus was constructed from HTLV-I and visna. And that's correct except he didn't go far enough because really HTLV-I is just bovine leukemia virus in man.

So both [Seale and Segal] were saying the same sort of stuff, but neither one could exactly figure out how it was done. And so that's basically what we figured out, how it occurred. And we believe it occurred at Fort Detrick. . . . And Segal was probably supplied information by the KGB.

[This sudden reference to the KGB threw me again. Somehow I needed to reconcile why Strecker, who believed the Russians may have brought AIDS to America, also recognized Fort Detrick as the source of the scourge.]

ROBERT: The Russians wrote in over 400 public places that the virus was constructed over here. And if you remember our good surgeon *genital* went over there and made a deal with them. I don't know if you know anything about that?

LEN: Which surgeon general was that?

ROBERT: Koop.

LEN: No. I didn't know that.

ROBERT: Yeah. Koop went to Russia - to Moscow - and basically made a deal with them to stop talking about it and we'd give them our money.

[That doesn't surprise me, I thought, reflecting on the alleged

apology Gorbachev offered Reagan according to Covert's 'Cutting Edge.'] [34]

LEN: That's what I figured cause something like that is talked about vaguely in the book that I got from Fort Detrick. By the way, have you seen that book?

ROBERT: No.

LEN: You've got to get a copy of it. It came out in 1993. It's the fifty year history of Fort Detrick. It's free. They'll send it to you.

ROBERT: Well they won't send me one.

[Strecker seemed to relish that possibility and his notoriety.]

LEN: Oh they will. It's by a very nice guy. He's the public relations director for the fort. His name is Norman Covert. Imagine that?

ROBERT: Norman Covert? [Strecker laughed heartily] Is that a code name?

LEN: That's his real name. It's perfect, huh?

ROBERT: Well, do you know anything about what's going on there, the anthrax building?

LEN: Yes. I read about that.

ROBERT: Do you know about the Ebola building?

LEN: Vaguely.

ROBERT: Well they've got another building that's contaminated now; that they can't get into because of Ebola. You know they've got a whole bunch of problems. There's a bunch of people in Frederick [Maryland] that believe everything we talk about. We've quite a few supporters there, because they've had a lot of problems with strange illnesses. And so they're not entirely unsuspecting.

[I shuttered for a moment considering the fact that I was scheduled to visit Frederick on my way to present an AIDS education seminar in Western Pennsylvania later in the year.]

LEN: Robert, here's another one - Dr. Manuel Servin of the National Autonomous University of Mexico said that research conducted at Columbia by the U.S. Army was starting to point to the deadly disease in Haiti. He said that an unexplained accident caused the virus to spread to an employee of Haitian origin, and

this person he believed, brought it back to Haiti. What do you think of that theory? [35]

ROBERT: No. There were like 47,000 Haitians working in Zaire at the time of these experiments. . . . So we think they either got it from the vaccine project or from the gays that were infected.

LEN: OK. So there were tens of thousands of Haitians working on health and welfare activities in Zaire during the 1970s?

ROBERT: Yes.

LEN: OK. So here's another one. There was a European physician who told a Russian journalist that he believed he was working for a DOD subcontractor with orders to mutate simian monkey viruses to produce fast-killing human viruses. [31] Had you heard that?

ROBERT: No, but that's entirely possible.

LEN: And this report went on to say that the experiment was considered a partial failure because they got a slow-acting virus rather than a fast one. They were allegedly looking for fast acting killers.

ROBERT: Except that quick viruses are, of course, worthless because they're too easy to defend against. I mean a very fast-acting virus is not any good.

LEN: What do you mean?

ROBERT: Frank Fenner talks about all the characteristics. . . . Ahh. . . It's out of. . . Cold Springs Harbor, that's the other great biowarfare palace. It's the Eugenics Institute. . . . Cold Springs is in upstate New York. . . . That was the place started by Margaret Thanger and others. Now they're, of course, the big biological warfare place under the guise of just research. Anyway, Cold Springs Harbor put out a big thing on MMMV, that is, the 'maximally monstrous malignant virus,' and then they gave all the characteristics. And they talked about what it would take to produce this kind of virus. And, of course, all the characteristics are exactly those of the AIDS virus except for one thing, and that is, aerosolized transmission - which we believe is potentially possible.

[Oh, God forbid, I thought. I hadn't heard that theory before. Given Strecker's obvious intelligence and formidable knowledge, his assertion startled me.]

ROBERT: But they produced papers about what makes viruses malignant and monstrous. And one of the things is that they work

slowly, and not fast. And that they are constantly mutating. Exactly the characteristics of AIDS.

LEN: Interesting. It's unbelievable.

ROBERT: Yes it is.

Final Recommendations

LEN: Now, the first time we spoke, you mentioned something about. . . a forthcoming cure for AIDS. How might it work?

ROBERT: Well, it's very simple in theory; complicated in practice. Basically, just as viruses are little crystals, you might hit them with electromagnetic frequencies and destroy them. Just as you can shakedown a crystal and destroy it without disrupting the surrounding house, you can [theoretically] disrupt viruses without destroying the surrounding cell structure.

LEN: Are there laboratories working on that?

ROBERT: Not that I know of.

LEN: OK. Now there was something in the news the other day that the French had allegedly discovered a cure. Have you heard anything new?

ROBERT: Nah. I haven't heard or seen anything. . . . I can't believe the word would not be all over everywhere if they thought [they had a cure] . . . particularly the French. Now you see also what is Pasteur? The Pasteur Institute is their biowarfare institute, the same as Porton Down [in England], the same as Ivanofsky Institute [in Russia], the same as the Tokyo Institute. These are all the biowarfare centers for these countries; they're also the great AIDS research centers for these countries.

LEN: Right. It figures. Now my last question. If you could tell people one thing about AIDS or your theories, what would it be?

ROBERT: The whole story. Everything. How the virus was made; that it was man-made, and we think it represents a threat to the human species.

LEN: And if there's some positive thing that people can do you might recommend, what would it be?

ROBERT: Other than no IV drugs, reduce their [sexual] promiscuity, and no blood products, start by questioning some of the things that they hear which may or may not be true.

-NOTES-

[1] According to The Strecker Group, Dr. Strecker's brother, Ted Strecker, was found shot to death alone in his home in Springfield, Missouri, an apparent suicide, on August 11, 1988. In the past he suffered from depression and monumental frustration at the relative lack of interest in his findings. Ted had been working with Robert to uncover evidence linking the DOD to the development of HIV. Ted is credited, along with Black military officer, Zears Miles, for having discovered and distributed fig. 1.1. However, Robert spoke with Ted the night before his death. He seemed cheerful - "in good spirits," - looking forward to new developments that promised progress. The following day he was found dead. His 22-caliber rifle lay next to him. He left no note, no message, and he said no goodbyes. This was very untypical of him. Officially the death was ruled a suicide. "Next," according to The Strecker Group, "Illinois State Representative Douglas Huff of Chicago was found alone in his home, dead from an apparent overdose of cocaine and heroin, on September 22, 1988. Representative Huff did everything in his power to make the Illinois State Legislature and the people of Chicago aware of Dr. Strecker's work. He was very vocal, gave many press interviews, was constantly on television and radio urging people to wake up to the coverup concerning AIDS. Did Representative Huff use drugs? Perhaps yes, but only occasionally and recreationally. Was he an addict? No. Would he have known how dangerous a massive overdose of cocaine and heroin was? Yes of course. Cause of death: officially a stroke. Dr. Strecker has serious doubts. . . ."

[2] Strecker's comment came months prior to the first confirmed case of HIV transmission from a human bite. See: Singer G and Athans M. 91-year-old teaches world about AIDS: HIV contracted from prostitute's bite. Sun-Sentinel Saturday October 28, 1995 p1A and 6A.

[3] Several reports confirmed that The Wistar Institute is located at 36th and Spruce Sts. Philadelphia, PA 19104 (215-222-6700). See: Science and Technology Division National Referral Center: Biological Sciences: A Director of Information Resources in the United States. Washington, D. C.: Library of Congress, 1972, p. 493.

[4] New Bolton Center is apparently now part of the University of Pennsylvania. One reference which appeared during my Medline search was: Bowman KF, Tate LP Jr., Evans LH and Donawick WI. Complications of cleft palate repair in large animals. Journal of the American Veterinary Medical Association 1982;180;6:652-7.

[5] Gonda MA, Braun MJ, Carter SG, Kost TA, Bess JW, Arthur LO and Van Der Maaten MJ. Characterization and molecular cloning of a bovine lentivirus related to human

immunodeficiency virus. *Nature* 1987;330:388-391. This research group, which reported stark similarities between the bovine immunodeficiency-like virus (BIV) and HIV, interestingly enough was funded by the National Cancer Institute and based at the Frederick (Fort Detrick) Cancer Research Facility in Maryland.

[6] Stedman's Medical Dictionary, Twenty-Second Edition. Baltimore Maryland: Williams & Wilkins Co., p. 1233.

[7] Temin HM. The role of the DNA provirus in carcinogenesis by RNA tumor viruses. In: *The Biology of Oncogenic Viruses*, LG Silverster, Ed. New York: Elsevier, 1971, 176; Temin HM. The provirus hypothesis. *J. National Cancer Institute* 1971;46:3. Also see: Temin HM. The participation of DNA in Rous sarcoma virus production. *Virology* 1964; 23:486; Temin HM and Mizutani S. *Nature* 1970; 226:1211.

[8] Baltimore D. Viral RNA-dependent DNA polymerase. *Nature* 1970;226:1209.

[9] Maruyama K and Dmochowski L. Cross-species transmission of mammalian RNA tumor viruses. *Texas Medicine* 1973;69:65-75. Regarding Hilary Koprowski serving at The Wistar Institute in Philadelphia, see: Silversti LG. *The Biology of Oncogenic Viruses*. New York: American Elsevier Publishing Company, Inc., 1971, p. 332; HuebnerRJ, TodaroGJ, SarnaP, Hartley JW, FreemanAE, Peters RL, Whitmire CE, Meier H and Gilden RV. Switched Off Vertically Transmitted C-type RNA Tumor Viruses as Determinants of Spontaneous and Induced Cancer: A New Hypothesis of Viral Carcinogenesis. In: *Defectiveness, Rescue and Stimulation of Oncogenic Viruses: Second International Symposium on Tumor Viruses*, Royaumont, France June 3-5, 1969. Paris: Centre National De La Recherche Scientifique, 1970, pp. 33-77; Montagnier L. Alterations de la surface des cellules BHK21 en rapport avec leur transformation par des virus onogenes. *Ibid.*, p. 6; For more on ethnic cancer studies see: MacMahon B. The ethnic distribution of cancer mortality in New York City, 1955. *Acta Unio Internat. contra cancrum*, 1960 16;1716; Newill VA. Distribution of cancer mortality among ethnic subgroups of the white population of New York City, 1953-58. *J. National Cancer Institute* 196126:405.

[10] Miller JM, Miller LD, Olsen C and Gillette KG. Virus-like particles in phytohemagglutinin-stimulated lymphocyte cultures with references to bovine lymphosarcoma. *Journal National Cancer Institute* 1969;43:1297-1305. See also: Miller JM and Van Der Maaten MJ. The biology of bovine leukemia virus infection in cattle. In: *Viruses in Naturally Occurring Cancers: Book B*. Essex M, Todaro G, and zur Hausen H, Eds. Cold Spring Harbor Conferences on Cell Proliferation, Vol. 7, New York: Cold Spring Harbor Lahoratory, 1980, pp.901-909.

[11] Burny A, Bex F, Chantrenne J, Cleuter Y, Dekegel D, Ghysdael J, Kettmann R, Leclercq M, Leunen J, Marnrnerickx M and Portetelle D. Bovine leukemia virus involvement in enzootic

bovine leucosis [lymphosarcoma in cattle]. *Adv. Cancer Res.* 1978;28:251; See also: Bumy A, Bruck G, Cleuter y et al. Bovine leukemia virus, a distinguished member of the human T-lymphotropic virus family. Soc. Press. Tokyo: VNU Science Press, Utrecht, pp. 219-227,1983

[12] Bobrow SN, Smith RG, Reitz MS and Gallo RC. Stimulated normal human lymphocytes contain a ribonuclease-sensitive DNA polymerase distinct from viral RNA-directed DNA polymerase. *Proc. Nat. Acad. Sci.* 1972;69;11:3228-3232; Gallo RC, Pestka S, Smith RG, Herrera, Ting RC, Bobrow SN, Davis C and Fujioka S. RNA-and DNA-dependent DNA polymerases of human normal and leukemic cells. In Silvestri, L. (Ed.): II. *Lepetit Colloquia on Biology and Medicine "The Biology of Oncogenic Viruses."* Amsterdam, North-Holland, 1971, p. 210.

[13] Mussgay M, Dietzschold B, Lorenz R, Matheka HD, Matthaues W, Straub OC, Weiland F, Wilesmith JW, Frenzel B and Kaaden o. Some properties of bovine leukemia virus, its use in seroepidemiological studies, and eradication of the disease from infected herds. In: *Viruses in Naturally Occurring Cancers: Book B.* M. Essex, G. Todaro and H zur Hausen, Eds. New York: Cold Spring Hamor Laboratory, 1980, pp. 911-925; Flensburg JC. Attempt to eradicate leukosis from a dairy herd by slaughter of cattle with lymphocytosis. Report over a ten-year period. *Vet. Microbiol.* 1976 1 :301; Callahan R, Lieber MM, Todaro GJ, Graves DC and Ferrer FJ. Bovine leukemia virus genes in the DNA of leukemic cattle. 1976 *Science* 192:1005; Crespeau S, Sarsat FP, Vuillaume A, Levy D and Parodi AL. A two-year sero-epidemiological survey of bovine leukemia virus (BLV) infection in a high-incidence area of the southwest of France. *Ann. Rech. Vet.* 1978;9:747; Haase A. The slow infection caused by visna virus. *Curl: Top. Microbiol. Immunol.* 1975;72:101.; Narayan O, Griffin DE and Clements JE. Virus mutation during "slow infection"- Temporal development and characterization of mutants of visna virus recovered from sheep. *J. Gen. Virol.* 1978;41:343.

[14] Though I was unable to locate the Montagnier publication re: placing EBV into infected T-cell culture to keep them alive, I did locate several articles published in the early 1970s that noted the presence EBV caused lymphocytes to proliferate. Several papers were presented during conferences attended by both Montagnier and Gallo that emphasized the role of EBV in molecular biology and tumor virology. Gallo wrote about the work of Pagano and the role of EBV in human cancer in his 1977 book, referred to EBV as a model oncogenic virus: "The evidence with EBV, although not definitive, has been extended from Burkitt's lymphoma to nasopharyngeal carcinomas." So he was certainly well aware of the ability of EBV to prompt lymphocytic proliferation. See: Gallo R. *Recent Advances in Cancer Research: Cell Biology, Molecular Biology, and Tumor Virology, Volume I.* Cleveland: CRC Press, Inc., 1977; In 1971 EBV was also studied by Gallo and co-workers. See Fujioka S and

Gallo RC. Aminoacyl Transfer RNA Profiles in Human Myeloma Cells. *Blood* 1971; 38;2:246-252.

[15] I was unable to find direct evidence that Montagnier had worked side-by-side with Gallo at the NCI. However, I located ample evidence that the two traveled in some of the same scientific circles, and attended many of the same cancer virus conferences. It is clear they were aware of each others' research from the late 1960s. Also, Montagnier published a report that suggested links between LAV/HTLV-III and the bovine leukemia virus. See: Alizon M and Montagnier L. Relationship of AIDS to other retroviruses. *Nature* 1985;313:743.

[16] Strecker's comments about the "famous cat house experiments," wherein Don Francis and Robert Gallo allegedly knew it was possible for mutant forms of feline leukemia virus (FeLV) to jump species to humans, are supported by parallel presentations made by the researchers during the same Cold Spring Harbor conference in 1980 See: Gutensohn N, Essex M, Francis DP and Hardy, Jr. WD. Risk to humans from exposure to feline leukemia virus: Epidemiological considerations; and Wong-Staal F, Koshy R and Gallo RC. Feline leukemia virus genomes associated with the domestic cat: A survey of normal and leukemic animals. In: *Viruses in Naturally Occurring Cancers: Book A*. Essex M, Todaro G, and zur Hausen H, Eds. Cold Spring Harbor Conferences on Cell Proliferation, Vol. 7, New York: Cold Spring Harbor Laboratory, 1980, pp. 699-706; 623-634.

[17] World Health Organization Report. Five years of research on virus diseases. *WHO Chronicle* 1969 23;12:564-572; World Health Organization Report. Recent work on virus diseases. *WHO Chronicle* 1974;28:410-413; Kalter SS and Heberling RL. The study of simian viruses-work of the WHO collaborating laboratory on comparative medicine: Simian viruses. *WHO Chronicle* 1969;23;3:112-117.

[18] Strecker was also accurate in reporting that Salk and colleagues at The Salk Institute had been researching RNA and DNA retroviruses including the simian monkey virus (SV40) with financial support from the NCI and the West German Max-Planck Society. Thus, Salk quite plausibly participated, as Strecker alleged, in writing up the history of AIDS virus research, and in making "up a story." See: Tonegawa S, Walter G and Dulbecco R. Transcription of SV 40 genome transformed and lytically infected cells; Eckhart W. Induction of cellular DNA synthesis after infection by polyoma virus: viral gene expression in the presence of hydroxyurea. (Both research teams from The Salk Institute) In: *The Biology of Oncogenic Viruses*. Proceedings of the second Lepetit Colloquium, Paris France, November 1970. LG Silvestri, Ed. New York: Elsevier, 1971, pp. 65-75;290-294.

[19] Beardsley T. AIDS: Pasteur sues over patent. *Nature* 1985;318:595; Palca J. AIDS: US wins round in patent row. *Nature* 1986;322:200; Palca J. Franco--US agreement on AIDS

test within sight: AIDS patent dispute near end? France and United States call truce. *Nature* 1987;326:115; See also: Staff writer. Settling the AIDS virus dispute. *Nature* 1987;326:425-426; Anderson C and Butler PD. US rejects French request to reopen AIDS patent deal. *Nature* 1987;326:425-426; Rensberger B. AIDS scientist Gallo, rival meet to discuss cooperation. *The Washington Post*, Saturday January 9, 1993, p. A2; Anderson C. Scientific misconduct: Popovic is cleared on all charges; Gallo case in doubt. *Science* 1993;262:981-983; Culliton BJ. Misconduct charges against Gallo withdrawn after Popovic decision. *Nature* 1993;366:191; Brown D and Schwartz I. Case against AIDS scientist dropped: Agency decides evidence insufficient to sustain Gallo charges. *The Washington Post* Saturday, November 13, 1993, pp AI;16; Greenberg DS. End of the Gallo case-maybe. *The Lancet* 1993;342:1289; Staff writer. What to do about scientific misconduct. *Nature* 194;369:261-262.

[20] Gutensohn N, Essex M, Francis DP and Hardy, Jr. WD. Risk to humans from exposure to feline leukemia virus: Epidemiological considerations; and Wong-Staal F, Koshy R and Gallo RC. Feline leukemia virus genomes associated with the domestic cat: A survey of normal and leukemic animals. In: *Viruses in Naturally Occurring Cancers: Book A*. Essex M, Todaro G, and zur Hausen H, Eds. Cold Spring Harbor Conferences on Cell Proliferation, Vol. 7, New York: Cold Spring Harbor Laboratory, 1980, pp.699-706; 623-634.

[21] Gold M. *Conspiracy of Cells* Albany, NY: State University of New York Press, 1986.

[22] Szmunes W, Stevens CE, Harley EJ, Zang EA and Oleszko WR et al. Hepatitis B vaccine: Demonstration of efficacy in a controlled clinical trial in a high-risk population in the United States. *New England Journal of Medicine* 1980;303;15:833-841. Regarding Szmunes, I later learned from AIDS researcher and physician Alan Cantwell, Jr. that Wolf Szmunes became a professor of epidemiology at Columbia University School of Public Health, and chief of epidemiology at the New York City Blood Center in Manhattan shortly after his arrival in the United States. According to Cantwell, who credits *Magic Shots* (1982) by Allan Chase, Szmunes was born in 1919 in Poland, and came to the United States in 1968 after being expelled from Poland "by the communist government in an anti-semitic purge." With no other history, it is interesting that Szmunes, so quickly, in 1969, became the chief epidemiologist at the New York City Blood Center. For more information see: Cantwell A. *AIDS and the Doctors of Death: An Inquiry into the Origin of the AIDS Epidemic*. Los Angeles: Aries Rising Press, 1988.

[23] An epitope is a molecular region on the surface of an invading microorganism or infectious agent capable of eliciting an immune response and of combining with the specific antibody produced by such a response. It is also called a "determinant," or "antigenic determinant."

[24] Gardner WU. *International union against cancer: Brief*

history, organization, and program review of a nongovernmental voluntary organization. National Cancer Institute Monograph 197440:51-55; Higginson J and Muir CS. Epidemiologic program of the International Agency for Research on Cancer. National Cancer Institute Monograph 197440:63-70.

[25] Koch's postulates were advanced as a scientific method to determine the cause and effect relationship between a germ and the disease it is believed to cause. It is based on three tests: 1) the microbe must be invariably found among organisms demonstrating the disease; 2) the microbe must not be present in disease-free organisms; and 3) the microorganisms must be effective in causing similar diseases among laboratory animals infected with the germ.

[26] Strecker R. This is a bio-attack alert. The Strecker Group, 1501 Colorado Boulevard, Los Angeles, CA 90041. March 28, 1986, pp. 24-26.

[27] Rowe DS. The WHO immunology laboratories at Lausanne. WHO Chronicle 1968;22;11 :496.

[28] WHO Report (Based on the 1969 report The medical research programme of the World health Organization, 1964-1968, Geneva.) Five years of research of virus diseases. WHO Chronicle 1969;23;12:564-572.

[29] Kalter SS and Heberling. The study of simian viruses. WHO Chronicle 1969;23;3:112-117.

[30] Three HIV genes-gag, pol and env-code for the structural parts of the AIDS virus envelope, or for the enzymes needed for gene transcription and insertion. According to authorities (Haseltine WA, Wong-Staal F. The molecular biology of the AIDS virus. Scientific American 1988;52-62; and Kieny MP. Structure and regulation of the human AIDS virus. J AIDS 1990;3:395-402), the gag, or group specific antigen, gene codes for the p24 proteins which form an "inner shell" within the virus. The pol gene codes for the reverse transcriptase enzyme which transcribes viral RNA to form a proviral form of DNA. The pol gene also codes for the endonuclease enzyme which transports the provirus into the host cell's nucleus and then deposits it into the host chromosome. The env gene codes for the "transmembrane protein" gp41 (glycosylated protein 41), which is incorporated into the envelope along with a closely associated gp120 protein which itself may have cell and nerve killing effects. The tat gene codes for a protein that enhances viral replication.

[31] Moscow World Service in English. Belitskiy on How, Where AIDS Virus Originated. March 11, 1988. Published in International Affairs. FBIS-SOV-88-049, March 14, 1988, p. 24. Text discusses

Seale's allegations, but does not furnish specifics.

[32] Allison AC, Beveridge WIB, Cockburn WC, et al. Virus-associated immunopathology: Animal models and implications for human disease. Bulletin WHO 1972;47:257-263.

[33] Havana International Service in Spanish. German Claims AIDS Virus Created by Pentagon. FBIS-LAT 91-017. January 25, 1991. Caribbean, Cuba. Text discusses Dr. Jacobo Segal's allegations. Document PA 2401213091-0000 GMT 24, January 1991.

[34] Covert NM. Cutting Edge: A history of Fort Detrick, Maryland 1943-1993. Fort Detrick, MD: Headquarters, U. S. Army Garrison, Public Affairs Office, 1993. [For copies call 301-619-2018].

[35] Havana International Service in Spanish. Commentary Accuses U.S. of Developing AIDS Virus. LAT 24, June 1987. Caribbean, Cuba "Viewpoint" commentary read by Angel Hernandez. Document PA 200342- OOOGMT 19, June 1987. pp. A5-6.