The Untold Truth About Cancer

The US medical establishment once accepted a microbial cause of cancer, but in 1910 it did an about-face and from thereon refused to accept the validity of scientific studies that proved the existence of a cancer germ.

Part 1 of 2

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The word "cancer" is of Latin derivation and means "crab". Today, cancer "cure" is a vast industry. But by the turn of the 20th century, the medical profession had come to the conclusion that it was not a matter of whether infectious disease caused cancer, but of which one. For over 200 years, a cancer germ had been discovered and rediscovered, named and renamed, each scientist adding to the knowledge but to no avail. Then, in 1910, certain American medical powers did a 180-degree rotation, deciding that cancer was not caused by a microbe and that anyone who thought otherwise was a heretic, a charlatan or a quack.

Dr Virginia Wuerthele-Caspe Livingston and her network were none of the above, their meticulous peer-reviewed research and publications produced at the height of US post–World War II technology. Dr Dean Burk, who co-founded the US National Cancer Institute and headed its cell chemistry department for 34 years, went so far as to say that Livingston's cancer germ was as real and certain as anything known about cancer. Researcher Dr Alan Cantwell, Jr, grew up thinking that all germs responsible for the important diseases were supposed to have been discovered already. But much to his dismay, he found one that had been left out: the cancer germ. Cantwell knew that Livingston had already been branded by the medical orthodoxy for finding this cancer germ—thus, what he thought to be perhaps the major discovery of the 20th century was left largely discredited.

The striking analogy between cancer and tuberculosis (TB) was noticed long before the tubercle bacillus was discovered. In 1877, Sir John Simon clearly pointed out the similarity and in fact argued very strongly in favour of a microbial mycobacterial origin for cancer. Since then, literally thousands of articles and texts have shown malignant changes to spring from tuberculous infection. But Sir John's vindication would have to wait for Livingston's germ which, although tuberculosis-like, was not tuberculosis but an atypical form of this mycobacterium, melded from the mycobacterium and other related Actinomycetales. Had medical science, and the powers that be, spent as much time in investigating and destroying Livingston's germ as they did in attacking her and those around her, cancer might be curable today.

Hodgkin's cancer under attack

When Virginia Livingston was a student at Bellevue Medical College in New York City, her pathology teacher mentioned rather disparagingly that there was a woman pathologist at Cornell University who thought Hodgkin's disease (a form of glandular cancer) was caused by fowl tuberculosis.[1] This pathologist had published, but no one had confirmed her findings. Afterwards, Livingston compared slides of the two diseases. In Hodgkin's, the giant multinucleated cells were called Reed–Sternberg cells and were similar to the giant cells of tuberculosis which formed to engulf the tubercle

bacilli. Livingston stored away in her memory that this pathologist—Dr Elise L'Esperance—was probably right but would have a difficult time gaining acceptance for her findings.

By 1931, L'Esperance was seeing "acid fast" tuberculosis-like bacteria riddling her Hodgkin's cancer tissue samples. That germ, once injected into guinea pigs, caused them to come down with Hodgkin's, too, fulfilling Koch's postulates. She brought her stained slides to former teacher and prominent Cornell cancer pathologist Dr James Ewing, "the father of oncology". He initially confirmed that her tissue slides indeed showed Hodgkin's. But when he found out that her samples came through guinea pig inoculation with fowl tuberculosis which she had found in humans with Hodgkin's, Ewing, visibly upset, said that the slide samples then could not be cancer.

This reaction betrayed his chequered history as a high-placed medical politician. In 1907, you could have approached Dr James Ewing about a cancer germ and he would have embraced you over it. Was it not Ewing who at one time had proclaimed that tuberculosis followed Hodgkin's cancer "like a shadow"?

But a few years later, Ewing sent a sword through the heart of an infectious cause of cancer with *Neoplastic Diseases*,[2] becoming an ambitious zealot for radiation therapy with the directorship of what would one day become the Memorial Sloan–Kettering Cancer Center squarely on his mind. His entry lay in the hands of prominent philanthropist James Douglas. A vote for Ewing, Douglas knew, was a vote for continued radiation and so Douglas began sizeable uranium extraction operations from Colorado mines through his company, Phelps Dodge, Inc.[3]

Soon, Sloan's predecessor became known as a radium hospital and went from an institution with a census of less than 15 per cent of cancer patients—separated by partition, lest their disease spread to others—to a veritable cancer centre. But the very history of radiation revealed its flaws: by the early 1900s, nearly 100 cases of leukaemia had been documented in radium recipients, and not long thereafter it was determined that approximately 100 radiologists had contracted that cancer due to radium exposure.[4] Still, Ewing, by now an honorary member of the American Radium Society, persisted.

Elise L'Esperance was anything but alone in linking Hodgkin's to a germ called fowl tuberculosis. Historically, Dr Carl Sternberg himself, co-discoverer of Hodgkin's trademark Reed–Sternberg cell, believed that Hodgkin's was caused by tuberculosis. Both Fraenkel and Much[5] held, as did L'Esperance, that it was caused by a peculiar form of tuberculosis, such as fowl tuberculosis, and debate over the infectious cause of Hodgkin's waxed the hottest of all the cancers.

Into this arena L'Esperance stepped in 1931, with few listening. Her article "Studies in Hodgkin's Disease" was published in *Annals of Surgery*.[6] It proved to be the one legacy that no one, not even Ewing (who would soon die from a self-diagnosed cancer), could take away.

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Dr Virginia Livingston and cancer's true cause

Our [cancer] cultures were scrutinized over and over again. Strains were sent to many laboratories for identification. None could really classify them. They were something unknown. They had many forms but they always grew up again to be the same thing no matter how they were cultured. They resembled the mycobacteria more than anything else. The tubercle bacillus is a mycobacterium or fungoid bacillus.

– Virginia Livingston, 1972[7]

Virginia Wuerthele-Caspe Livingston was born in 1906 in Meadville, Pennsylvania, and went on to obtain impeccable credentials. Graduating from Vassar College, she received her MD degree from New York University. The first female medical resident ever in New York City, in time Livingston became a school physician in Newark, New Jersey, where one day a staff nurse asked for medical assistance.

The nurse had already been diagnosed with Raynaud's syndrome: the tips of her fingers were ulcerated and bled intermittently. Livingston diagnosed scleroderma, but upon further examination she noticed a hole in the nasal septum, something she had seen previously in the mycobacterial diseases TB and leprosy.

So Livingston approached dermatologist Dr Eva Brodkin and New Jersey pathologist Dr Roy Allen for confirmation, all the while convinced that mycobacterial infection was causing the scleroderma. She then performed cultures from a sterile nasal swab, and mycobacteria appeared everywhere. When she injected the mycobacteria into experimental chicks and guinea pigs, all but a couple died. During the autopsies, Livingston observed that the guinea pigs had indeed developed the hardened skin patches of scleroderma... some of which were cancerous.[8]

Livingston, now possessed, solicited fresh sterile specimens of cancer from any operating room that would give them to her. All cancer tissues yielded the same acid-fast mycobacteria. Allen confirmed her findings. Livingston then found that she could actually differentiate malignant from benign tissues by their tuberculous mycobacterial content.[9]

But still the explanation for why the cancer germ showed so many different forms was elusive.

Virginia Livingston tried as she might, but part of her problem in obtaining an American validation of her multi-shaped cancer germ lay firmly entrenched in the history of medicine, especially in the constantly changing field of microbiology. Louis Pasteur could handle being quickly rushed off a Paris Academy of Sciences podium to escape harsh reaction to his suggestion that children's milk be boiled first before drinking, but he could not tolerate his rival Antoine Béchamp's statement that a single bacterium could assume many, many forms. However, on his deathbed, Pasteur apparently changed his mind when he said "The terrain is everything"—meaning that the culture or milieu which the bacteria grew on or in could change their shape or characteristics. But it was too late, and even today most conventional microbiologists deny the existence of such form-changing (or pleomorphic) germs.

Dr Robert Koch, "the father of bacteriology" and discoverer of tuberculosis, could have helped. When he first worked with anthrax bacteria, he noticed that anthrax's classical rod shapes became thread-like inside the blood of laboratory mice, and then, after multiplying, they changed again into the same assumed spore-like forms that he later documented in tuberculosis as well.

Aware of what she faced, yet undismayed, Virginia Livingston methodically went about proving cancer's true cause. First in her line of attack were the long-suspected and well-publicised tumour agents of Rous, Bittner and Shope. By photomicrographs, Livingston and her group demonstrated acid-fast mycobacterial forms in each of these so-called "viral" cancers. These included the famed Rous chicken sarcoma.

Early on, Livingston had decided that she needed help in validating her cancer germ, and nobody knew the shapes and staining capacities of mycobacteria-related germs better than bacteriologist Dr Eleanor Alexander-Jackson of Cornell. As far back as 1928, Alexander-Jackson had discovered unusual and, up to that point, unrecognised forms of the TB bacillus, including its filterable forms.

By 1951, Alexander-Jackson was considered *the* expert TB microbiologist at Cornell.

In the same year, another American, Dr H. C. Sweany, proposed that both the granular and other forms of tuberculosis that passed through a filter caused Hodgkin's cancer.[10] This was subsequently supported in studies by Beinhauer, Mellon and Fisher.[11, 12] Mellon prophetically warned that tuberculosis could assume both its characteristic red acid-fast forms as well as its blue nonacid-fast forms, indistinguishable from common germs such as staphylococci, fungi and corynebacteria, and that this would surely perplex modern microbiologists.

When the American medical establishment chose to ignore these studies, Alexander-Jackson warned that a so-called cure for TB could be short-lived, as classical TB rods, for the moment gone underground as a nonacid-fast form, could resurface one day and spring back towards destruction. The medical orthodoxy had no serious time for Alexander-Jackson or her discoveries, but this would not disturb her as long as she focused on tuberculosis and its cousin, leprosy. But when she shifted her focus towards Livingston's cancer germ, the orthodoxy would move to destroy her. She simply posed too great a threat.

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Recognition at last

By December 1950, Livingston, who would go on to write over 17 peer-reviewed articles by the end of her career, wrote together with Alexander-Jackson and four other prominent researchers what still stands as a milestone on the infectious nature of cancer.[13]

At the American Medical Association's 1953 New York convention, participants were particularly riveted by an exhibit of Livingston's cancer germ, live. On the TV screen above, the cancer germs seemed indestructible, surviving a five-day experience of intolerable heat from closed-circuit microscopy. The press, muzzled by Sloan–Kettering's head, Dr Cornelius Rhoads, was not allowed to interview Livingston or report on this exhibit.[14]

As Livingston and Alexander-Jackson's work on the cancer germ became more and more convincing, opponents of their work surfaced and became more and more vocal.

Yet with recognition came visitors. Dr George Clark, a pathologist from Scranton, Pennsylvania, told Livingston that he had cultured Dr Thomas Glover's famed cancer germ from human cancer and developed metastasising tumours in animals from it. Clark assured Livingston that Glover was onto the same bacterial pathogen that she was.

Dr Glover's anti-cancer serum

Clark knew Glover as part of an investigative team of the US Public Health Service (USPHS), headed by Dr George W. McCoy in 1929. Glover had just become too well known to be ignored. His cancer serum was working. Much was at stake. The country was already committed to the idea that cancer could not possibly be an infectious disease, and Glover was saying that he had already isolated the cancer germ. Actually, he had not, but few would believe that it was really Glover's young, tobacco-chewing assistant, Thomas Deaken, who had isolated it.

Deaken had worked his way up New York's health and hospital system from the most menial positions to laboratory assistant. With neither formal medical nor scientific training, he nevertheless learned laboratory protocol. Incredibly, Deaken engineered a geranium-based culture medium, managing to grow out acid-fast tubercular bacteria. Then he inoculated mice and dogs, producing cancer with metastatic spread in every case.

Some time between 1917 and 1918, Deaken produced specific anti-cancer sera by injecting horses with the human cancer germ. Moreover, the sera worked whether in prevention or cure of cancer in his laboratory animals.[15] But Deaken had come to the point where he needed someone to lend credibility to his work, and that someone came in the form of Dr Thomas J. Glover of Toronto, Canada.

It will always be to Glover's credit that he saw the importance and application of Deaken's work from day one. A contract was quickly drawn up and executed. Glover rushed back to open a cancer clinic in Toronto. The serum worked in many but not all cases. However, as Glover's reputation grew, so too did the interest in him from Canada's medical establishment. A subpoena was issued, giving him 21 days to submit a full presentation of his treatment. But Glover was not cooperating. He was in trouble and would soon be chased out of Canada.[16]

In 1926, and now in the USA, Glover had his paper "Progress in Cancer Research" published.[17] It presented over 50 cases, most of which went into remission with his serum. It sparked additional notoriety, both in America and abroad.

In 1929, Livingston's friend Dr George Clark joined Dr McCoy, then head of the Hygienic Laboratory of the USPHS. Their intended destination: Glover's laboratory, now based at New York's Murdock Foundation. Glover was under investigation and McCoy wanted him to repeat his work, this time under Health Service surveillance and in Washington. Glover complied, and he and his team went to the nation's capital to prove their case at what was soon to become the National Institute of Health.

McCoy, the investigator, was impressed by Glover's work, and instead of coming down on Glover he issued in 1937 a letter to Surgeon General Thomas Parran, which spoke in glowing terms of the great importance and significance of Glover's cancer findings. Soon thereafter, McCoy was abruptly and mysteriously replaced by Dr R. H. Thompson.

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Dr Parran, a product of orthodox medicine, had a definite agenda. The question before him was whether or not to publish Glover's now finished Washington report, and Parran, despite continued committee approval, was not about to. This sent Glover into a cold rage, which ended with his walking away from Washington to publish independently.

In the meantime, Glover's serum, which had helped and saved so many, was subjected to cursory animal studies and a review without clinical trials before being condemned by government agencies.

Glover eventually returned to Canada, but he would never answer questions as to just what had happened in America.

Focus on breast cancer

Virginia Livingston now went specifically after breast cancer. She had 30 sterile cancerous breasts transported from operating rooms to her lab and isolated cancers from each breast. When axillary tissue from under the arm was supplied, she cut the cancerous portion from this as well. Livingston and Alexander-Jackson found the cancer germ everywhere; and in the case of underarm glands, even when the pathology report was negative, the cancer micro-organism surfaced.[18]

Meanwhile, Cornelius Rhoads, a champion of toxic chemotherapy, had replaced Ewing at Sloan. The head of chemical warfare during the Korean War, Rhoads was deeply committed to chemotherapy and the huge grants it brought from the pharmaceutical industry.

It is poorly recognised that the chemotherapy or "chemo" used against cancer began as a weapon of mass destruction *par excellence*. When the Axis folded at the end of World War II, nitrogen mustard, declassified, first came under real medical scrutiny for cancer treatment.

It was initially evaluated for lymphosarcoma in mice, but human studies soon followed as more and more variants of nitrogen mustard were concocted and tried.[19] Other related classes of chemotherapeutic agents followed, and so did their repercussions. Most had the potential to cause a second, entirely different, cancer.[20] Even tamoxifen, first synthesised in 1962, when used for the treatment of breast cancer was associated with a twofold to threefold increased risk of cancers of the uterus lining (endometrial cancers), some of which were high grade with a poor forecast.[21]

Nevertheless, Rhoads remained committed to the treatment and at the same time prepared a series of major roadblocks to stop Livingston. In 1950, he had barred her from presenting her paper on the cancer germ at the symposium of the New York Academy of Sciences by discrediting Dr Irene Diller, the symposium's sponsor, the chief editor of the respected journal *Growth* and a prominent cancer researcher. Diller, like many others, had accepted a gift from a pharmaceutical house at one point.

Livingston had come across Diller in a *Life* magazine article which discussed a Philadelphia cancer researcher who was observing strange fungus-like filaments protruding from cancer cells. Livingston and Alexander-Jackson convinced Diller that her fungal forms (the prefix "myco-" in mycobacterium denotes a germ with fungal properties) were part and parcel of the cancer microbe, and that crucial to the microbe's identification was acid-fast staining.

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Alexander-Jackson's elation over the group's infectious breast cancer findings came to an abrupt halt when she was informed by her private physician, Dr Frank Adair, that she had breast cancer. A radical mastectomy was performed at Sloan–Kettering on Adair's advice.

While anxiously waiting for the outcome, Livingston heard her name paged on Sloan's overhead intercom. Rhoads wanted to speak to her regarding Alexander-Jackson's ongoing surgery. It was urgent. Alexander-Jackson was still in the operating room. In Rhoads's office, the two adversaries faced off. Incredibly, Rhoads was asking for permission to go after a cancerous lymph node deep in the middle of Eleanor's chest. Livingston bristled.

"We have been looking for a tumor such as she has," said Rhoads.

Apparently, a radical mastectomy was not enough. He was seeking permission to try a new surgical technique to go after the deep chest node. Livingston had had enough. Just the thought of the cruel, disfiguring procedure made her sick. "Not on your life," she shot back as she left.[22]

How bacteria cause cancer

By 1965, Dr Edith Mankiewicz, Director of Laboratories at Montreal's Royal Edward Chest Hospital and Assistant Professor of Bacteriology at McGill University, had established the existence of mycobacteria-like germs inside cancer by examining human cancer tissue. In the bibliography of one of her landmark papers is reference to a personal communication with Dr Eleanor Alexander-Jackson.[23]

One of the cancers under Mankiewicz's trained eye was lung cancer. Lung cancer, or bronchogenic cancer, was first reported in the 19th century at a time when it was practically unknown, while mycobacterial disease of the lung, primarily tuberculosis, was so rampant as to be called "white plague" or, in certain circles, "captain of the men of death".

By the middle of the 17th century, one in five deaths was due to tuberculosis, and at the end of the 19th century there was fear that it would destroy the very fabric of civilisation in Europe.

So difficult was it to differentiate tuberculosis from the newly discovered bronchogenic cancer that it was only after cases first mistakenly diagnosed as lung cancer were operated on that the benefits of surgical resection of tuberculosis were recognised.[24]

Mankiewicz not only showed the cancer germ in malignant tissue but significantly demonstrated how it probably evolved from tuberculosis and related micro-organisms when some of the viral phages that lived in them jumped germs, bringing genetic materials which altered the target germs' virulence and made them drug resistant.

In fact, beneath her microscope lay a pictorial of how the cancer germ emerged from TB-like bacilli to create pre-malignant change in mammalian tissue.[25]

By 1970, Sakai Inoue, a PhD from Maebashi, Japan, and Dr Marcus Singer, from Case Western's developmental biology centre, had completed the single most convincing study of how bacteria cause cancer altogether, with TB-like mycobacteria.

Supported by grants from the American Cancer Society and the National Institutes of Health, their study[26] used cold-blooded animals, namely the newt or salamander and the frog. But similar studies showed its applicability to mice[27] and humans.[28, 29]

According to Inoue and Singer:

An organism similar to the mycobacterium described here has been isolated and cultured from tumors and blood of tumorous mammals, including man, and when injected into mice and guinea pigs has been reported to yield a chronic granulomatous disease, neoplasm [cancer], or some intergrade.[30]

Back in the spring of 1953, Dr Sakai Inoue noticed an adult salamander with a hard mass on its stomach. He removed the mass, which turned out to be malignant. Then he injected tissue from the mass into healthy animals. Again, cancer developed. In the work that followed, Inoue and Singer knew from electron micrographs that bacteria were involved, bacteria which stained acid fast: mycobacteria. Inoue inoculated three other types of mycobacteria into healthy animals. All came down with cancer—something that did not happen when other germs such as staphylococcus or streptococcus were used. Amazingly, Inoue and Singer even noted regressions in some of the cancers, especially if very dilute solutions of the germs were used to initiate them. Furthermore, since cancers stemming from "carcinogens" were structurally identical to mycobacteria-induced cancers, the investigators suggested that such "carcinogens" might merely be factors that activate pre-existing infection.[31] The phages inside mycobacteria are viruses known to be activated by carcinogens such as UV light and chemicals.[32] Mankiewicz, five years previously, had shown that these phages, once activated, could cause pre-malignant changes in mammalian tissue.[33]

Inoue and Singer's study should have convinced Livingston's opponents once and for all of the veracity of her results, and that she was not mistaking common contaminants such as staphylococcus or streptococcus for the cancer germ...but it did not.

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About the Author:

Lawrence Broxmeyer, MD, is an internist and medical researcher. He was on staff at New York affiliate hospitals of SUNY Downstate, Cornell and New York universities for well over a decade, his work including extensive treatment immediately prior to and in the midst of America's AIDS epidemic. In conjunction with colleagues in San Francisco and at the University of Nebraska, he first pursued, as lead author and originator, a novel technique to kill AIDS mycobacteria with outstanding results (see *The Journal of Infectious Diseases* 2002 Oct 15; 186[8]:1155-60). Recently he contributed a chapter regarding these findings in Sleator and Hill's textbook *Patho-biotechnology*, published by Landes Bioscience. Dr Broxmeyer's research covers the most challenging medical problems of our times, including AIDS, Alzheimer's disease, bird flu, cancer, Creutzfeldt–Jakob and "mad cow" diseases, diabetes, heart disease, Parkinson's disease, swine flu, tuberculosis and more. He is the founder and director of The NY Institute of Medical Research in Bayside, New York, USA. Dr Broxmeyer can be contacted by email at nyinstituteofmedicalresearch @yahoo.com and via his website http://drbroxmeyer.netfirms.com/.

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