Bacteria Cause Cancer - The Microscopic Evidence

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Can bacteria cause cancer? Ever since 1890, when pathologist William Russell described "a characteristic organism of cancer," there has been a small but dedicated group of scientists who have claimed that bacteria (not viruses) cause cancer. Their reports show an unusual microbe that can be seen microscopically in cancer tissue and cultured from cancerous tumors and blood. Similar bacteria have been reported in certain non-cancerous diseases as well. I use the term "cancer microbes" to refer to the bacteria described in this controversial and little-known area of cancer research.

The idea that bacteria cause major forms of cancer was discarded a hundred years ago by the medical establishment—and is still regarded as scientific heresy. Bacteria derived from cancer are generally considered as "laboratory contaminants" or "secondary invaders" or "opportunistic infections" of weakened cancerous tissue. Nevertheless, this communication provides evidence that "cancer microbes" can be demonstrated microscopically in cancer tissue. The origin of these bacteria and the various reproductive forms they express within the human body (in vivo) is also discussed.

For details on the history of the cancer microbe, refer to the "cancer bacteria" Wikipedia page, and my Internet article "The return of the cancer parasite" (2011).

1) The pleomorphic nature of the cancer microbe

Cancer bacteria defy the established rules of microbiology. The cancer microbe is "pleomorphic," meaning the germ can exist and appear in more than one form. This alleged "pleomorphism" immediately raises a century-old controversy because most microbiologists do not believe in bacterial pleomorphism. On the contrary, they believe bacteria are monomorphic, meaning they reproduce by simply dividing into two separate and similar appearing halves.

For more information on the monomorphism/pleomorphism debate and its relevance to cancer microbe research, consult Milton Wainwright's essential Internet article "Extreme pleomorphism and the bacterial life cycle: A forgotten controversy" (1997).

According to cancer microbe scientists, the cancer microbe may appear in lab culture as ordinary type bacteria, such as staphylococci, streptococci, cocco-bacilli, and rarely as TB-like mycobacteria. Needless to say, such a proposed pleomorphic germ would be difficult, if not impossible, for most microbiologists to accept.

Further complicating the matter is research showing that cancer bacteria are capable of producing tiny sub-microscopic virus-like and mycoplasma-like forms, as well as large fungal-like forms known as "large bodies." Such claims are anathema to the scientific world. Nevertheless, the recognition of extreme growth forms of the cancer microbe, as well as the complex "life cycle" attributed to it, are essential to try and make sense out of the proposed microbiology of cancer.

Cancer microbes can assume different forms within the body because they are "cell wall deficient forms" (also called L-forms). The absence of a bacterial cell wall causes a loss of rigidity and results in organisms assuming a variety of shapes and sizes. When various species of bacteria are in the cell wall deficient state, they cannot be distinguished from one another.

Wainwright cautions us to pay attention to pleomorphic bacteria. "The literature on extreme pleomorphism remains intriguing, and some aspects of it may be worthy of reappraisal. By merely dismissing it, we may be ignoring something of fundamental importance. This is especially likely since examples of extreme variation in bacterial morphology continue to be linked with various diseases and cancer in animals and humans."

2) Cancer microbes and "acid-fast" bacteria

My mentor Virginia Livingston (1906-1990), undeniably the leading proponent of cancer microbe research, first discovered tuberculosis-type acid-fast staining bacteria in 1947 in scleroderma, a sometimes fatal autoimmune connective tissue disease that causes hardening of the skin. Her research quickly led to the finding of similar pleomorphic bacteria in cancer and in other diseases.

I met Livingston shortly after my independent discovery of pleomorphic acid-fast bacteria in scleroderma in 1966. A lifelong friendship ensued and I was able to confirm some of her cancer discoveries, particularly the identification of bacteria within scleroderma and cancerous tissue.

Through my association with several noted microbiologists who had extensively studied cell wall deficient bacteria, I learned about pleomorphic forms of acid-fast mycobacteria, particularly the round staphylococcal-like forms that were considered an additional growth form of mycobacteria. As a result of this somewhat esoteric scientific knowledge, I was able to confirm and report the presence of these coccoid forms in vivo in skin biopsy material from cancer, AIDS, and certain diseases of unknown etiology. In addition, I discovered similar coccoid forms in the internal organs and connective tissue in autopsy cases of scleroderma, lupus, lymphoma, AIDS, and non AIDS-related Kaposi's sarcoma.

3) The microscopic detection of the cancer microbe in vivo

Traditionally, bacteria in diseased tissue can be detected with a so-called Gram stain. However, because cancer microbes in vivo have defective or absent cell walls, they do not stain well with the Gram stain. It is well-accepted that cell wall deficient forms of bacteria are notoriously difficult to stain. Also the traditional "hematoxylin and eosin" stain, routinely used by pathologists to diagnose disease in tissue biopsy sections, does not stain cancer bacteria.

One of Livingston's great discoveries was that the cancer microbe could be identified in tissue (and in culture) by use of the "acid-fast stain," the traditional stain used to detect the acid-fast (red-staining) rod forms of mycobacteria that cause tuberculosis. It is not unusual for certain microbes and fungi to require special staining for detection. Bacteria that cause stomach ulcers, Legionnaire's disease, and syphilis, are a few examples where special staining is required.

By use of the acid-fast stain, the cancer microbe appears primarily as purple-stained variably-sized, round coccoid forms similar to the size and shape of ordinary staphylococci. These must be viewed at the highest magnification of the microscope and with the use of the oil-immersion lens, which magnifies 1000 times. The bacteria are seen within cells in grape-like and tightly packed clusters. They can also be found singly and in small groups scattered around the connective tissue.

Because the bacteria are cell wall deficient, it is possible to occasionally encounter very large globular forms of the microbe. Due to their size, these forms can be confused with fungal bodies and spores and are consistent with what microbiologists call "large bodies." These forms in vivo can attain the size of red blood cells and even larger.

One wonders how scientists can still believe exclusively in monomorphism when modern laboratory investigations show these pleomorphic large forms are an integral part of the reproductive "life cycle" of various bacteria. (In this regard, see the work of the late Lida Mattman and Gerald Domingue, both experts on cell wall deficient bacteria, and the current work of Nadya Markova of the Institute of Microbiology, in Sofia, Bulgaria.)

It is my belief that large bodies in vivo are similar to what Scottish pathologist William Russell again reported in The Lancet in 1899 as "the parasite of cancer." Unfortunately, his research was discredited over a century ago at a time when cell wall deficient bacteria and large bodies were unknown to microbiologists. Modern pathologists recognize "Russell bodies" in diseased tissue, but consider them non-microbial in nature. No attention has been paid to these forms as possible large forms of cell wall deficient bacteria. For details on Russell, see "The Russell body: The forgotten clue to the bacterial cause of cancer" (2003), at the www.joimr.org website.

There are three pleomorphic forms that can be encountered in the microscopic search of specially-stained tissue sections for cancer microbes. These are 1) the acid-fast rod forms typical of mycobacteria; 2) the intracellular and extracellular round coccoid forms; and 3) the "large body" forms.

During my years of microscopic observations, I found typical tuberculosis-type acid-fast rod-shaped bacteria in scleroderma, and also within the tumor of an immunoblastic sarcoma (a connective tissue tumor) in a gay man with terminal AIDS. These rod-shaped bacteria in tissue are very rare and can require many hours of microscopic study to demonstrate them.

However, the coccoid forms are the most prevalent and easy-to-find forms. They can be seen tightly or loosely packed within a cell, or in grape-like configurations, or scattered singly around the tissue. The large bodies are infrequently encountered. Currently, coccoid forms and large bodies

are not recognized or reported by pathologists as microbial growth forms.

The microbe is easiest to detect in scleroderma. Figures 1-3 illustrate rare acid-fast TB-like rod-forms, frequent coccoid forms lying “naked” in the collagen portion of the skin, and uncommon ghost-like large body forms in the fatty portion of the skin. Figure 4. shows the pleomorphic mycobacteria cultured from scleroderma skin in a severe and ultimately fatal reported case. Note both the acid-fast red-stained rod forms and the non-acid-fast blue-stained coccal forms of this organism. Figures 4-10 show the common intracellular and extracellular coccoid forms encountered in the tissue of breast cancer, prostate cancer, Hodgkin’s lymphoma, AIDS-related Kaposi’s sarcoma and lung cancer.

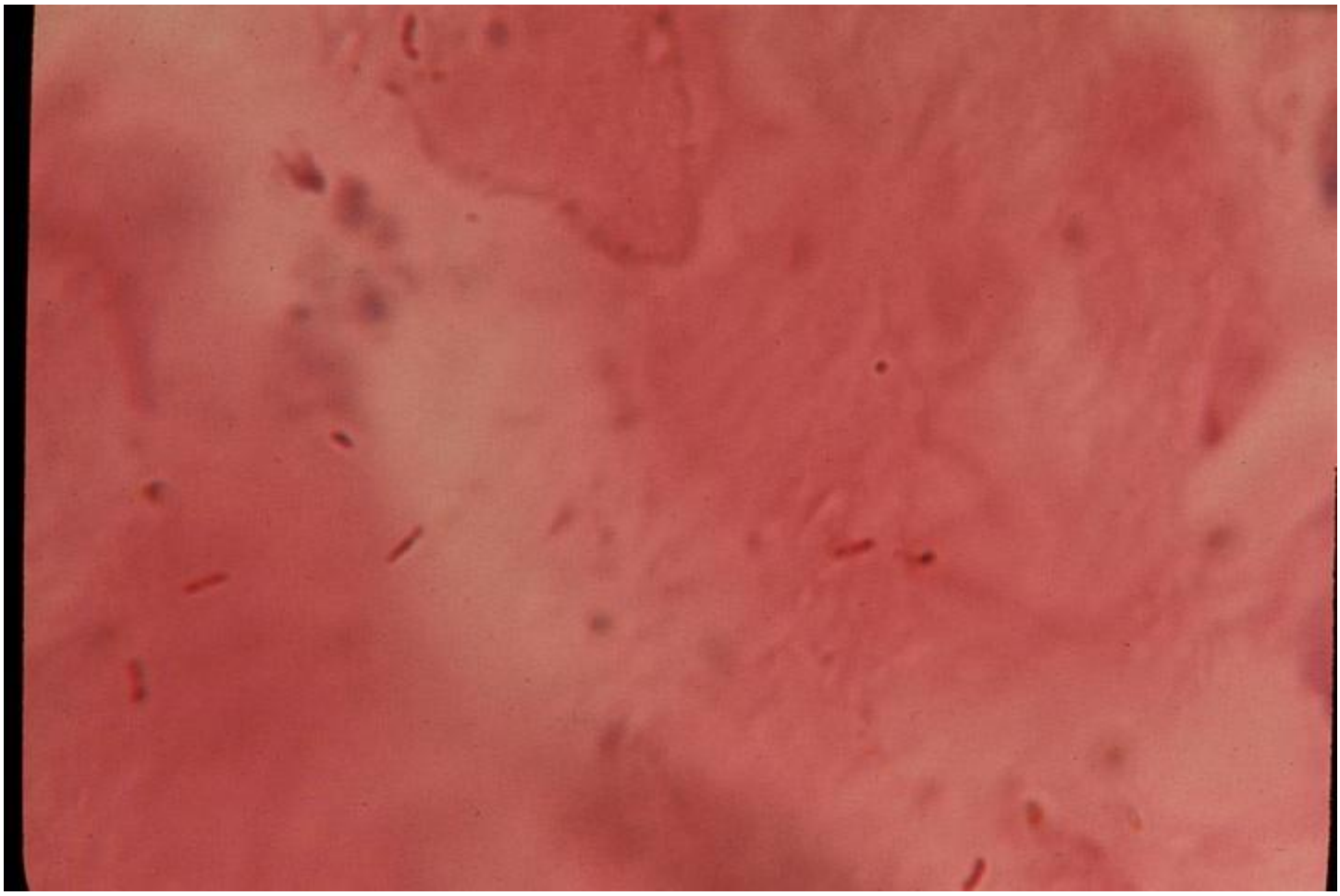

Fig 1. Rare acid-fast rod forms of mycobacteria in the dermis portion of the skin in scleroderma. Acid-fast stain, magnification x1000, in oil.

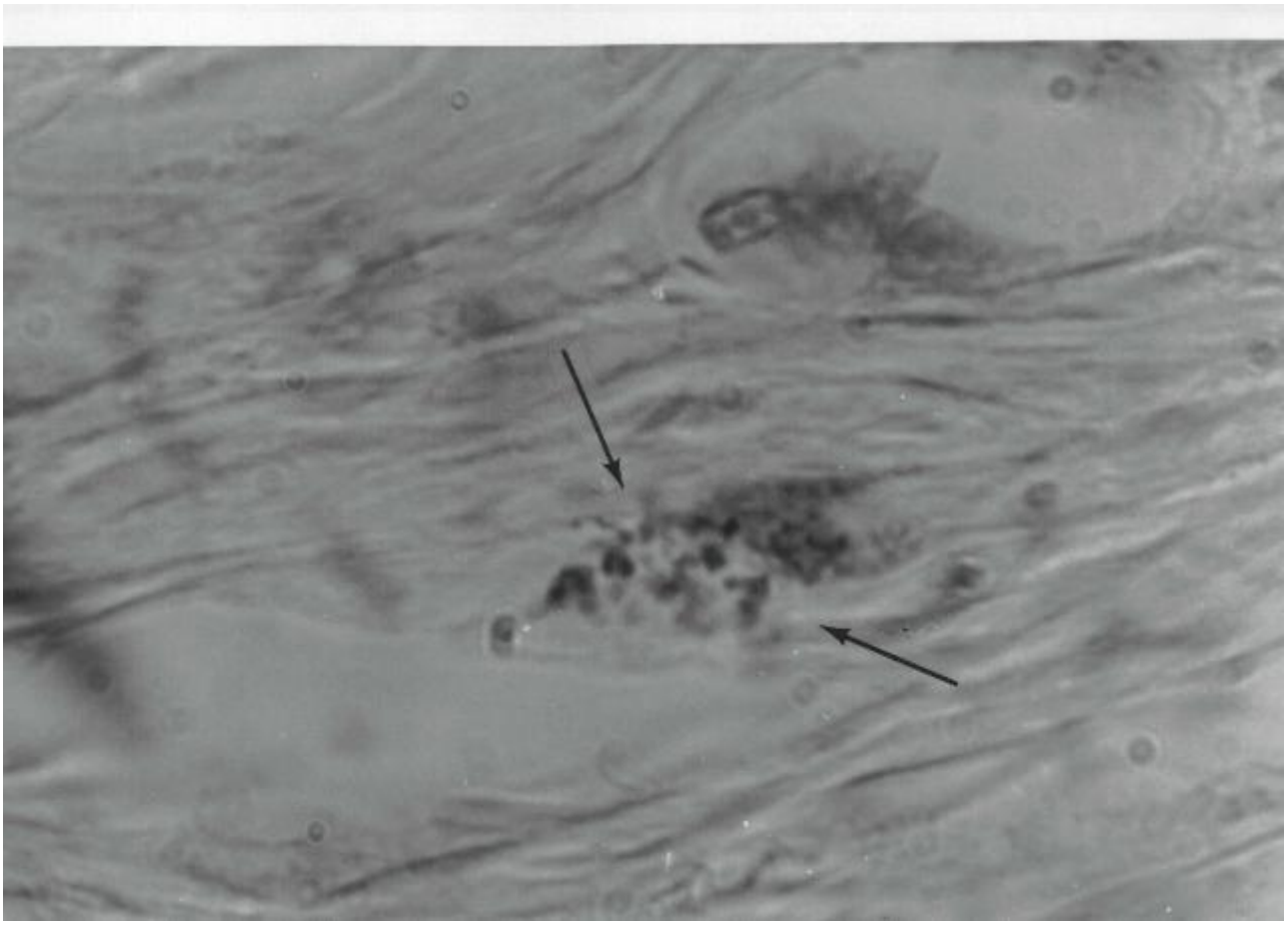

Fig 2. Coccoid forms in the dermis of the skin in scleroderma. Acid-fast stain, x1000.

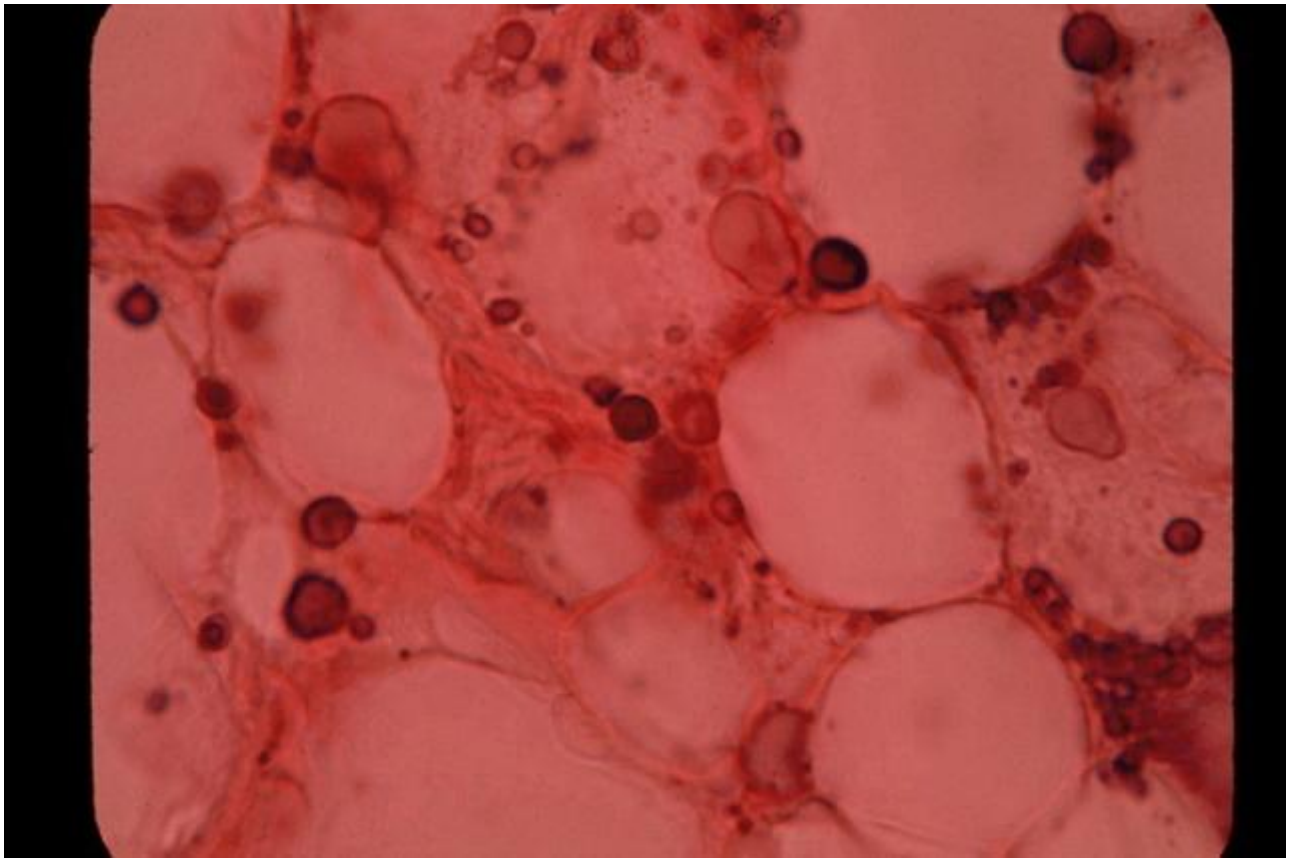

Fig 3. Variably-sized, clear, ghost-like "large body" forms of pleomorphic bacteria in the fatty portion of the skin in scleroderma. Acid-fast stain, x1000.

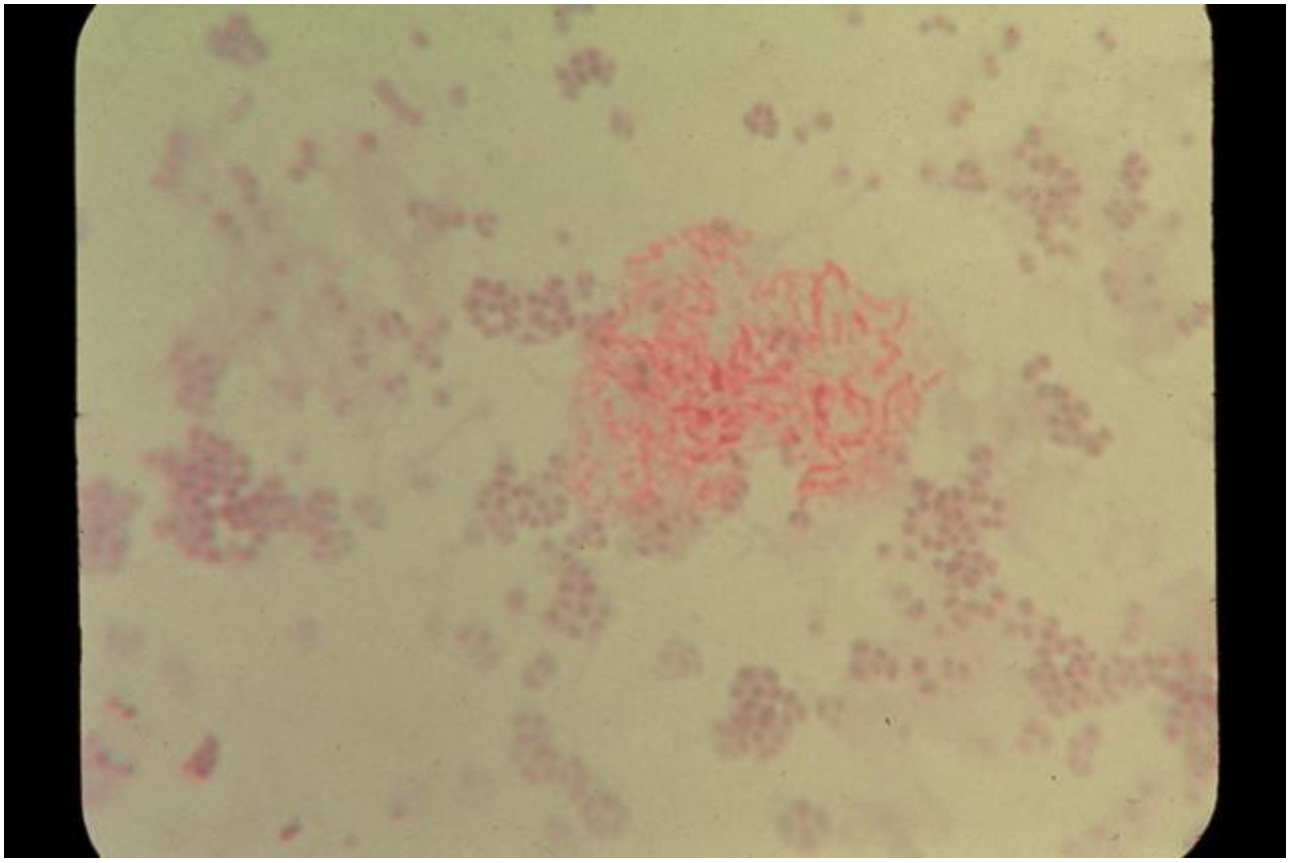

Fig 4. Smear from scleroderma skin culture of pleomorphic acid-fast mycobacteria showing red-stained rod forms along with non-acid-fast blue-stained round coccal forms. Acid-fast stain, x1000.

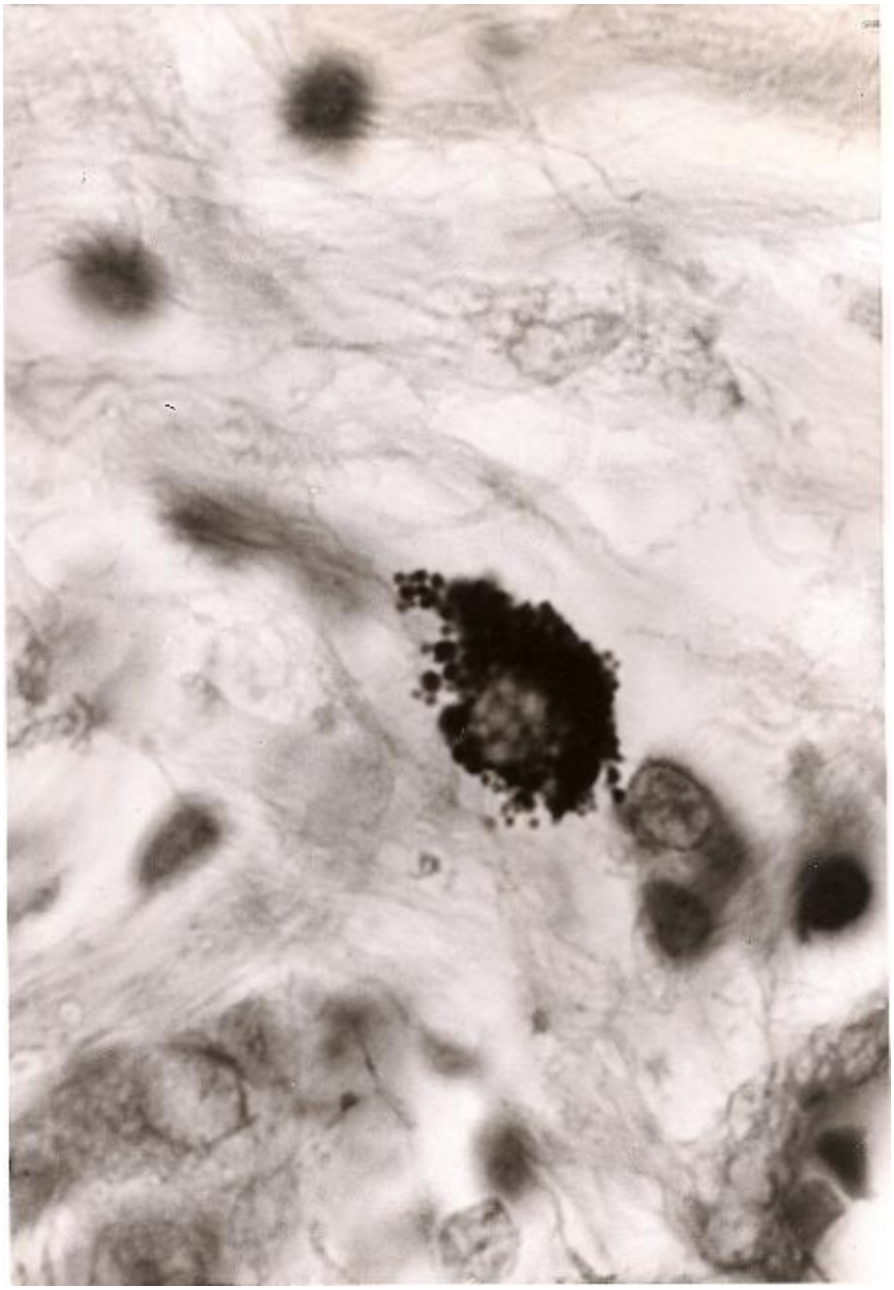

Fig 5. Breast cancer showing tightly-packed, variably-sized coccoid forms within a cell. Acid-fast stain, x1000.

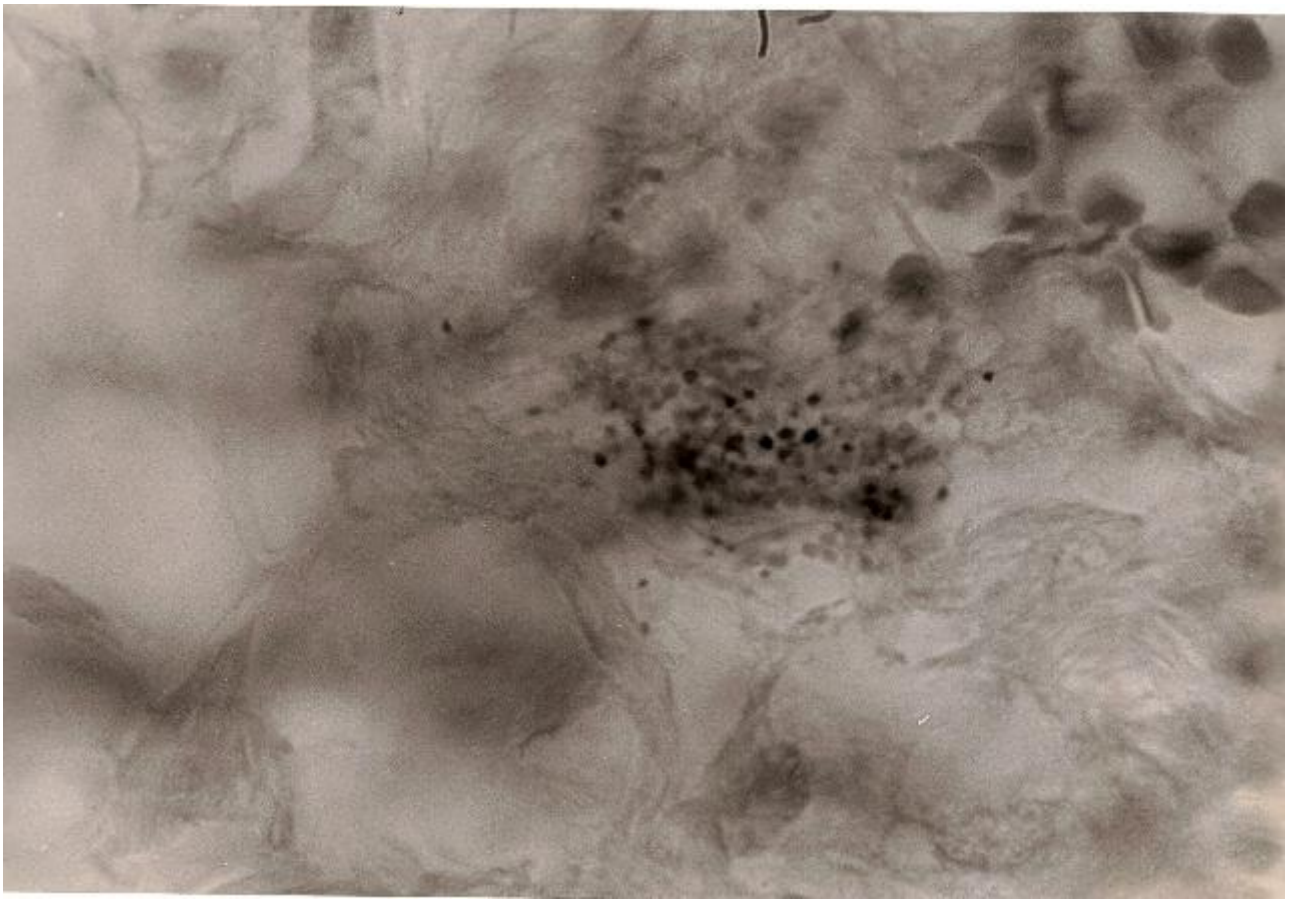

Fig 6. Breast cancer showing extracellular, loosely-packed, variably-staining coccoid forms in the connective tissue. In the upper right of the photo are red blood cells. Note the size of the tiny coccoid forms as compared to the size of the blood cells. Acid-fast stain, x1000.

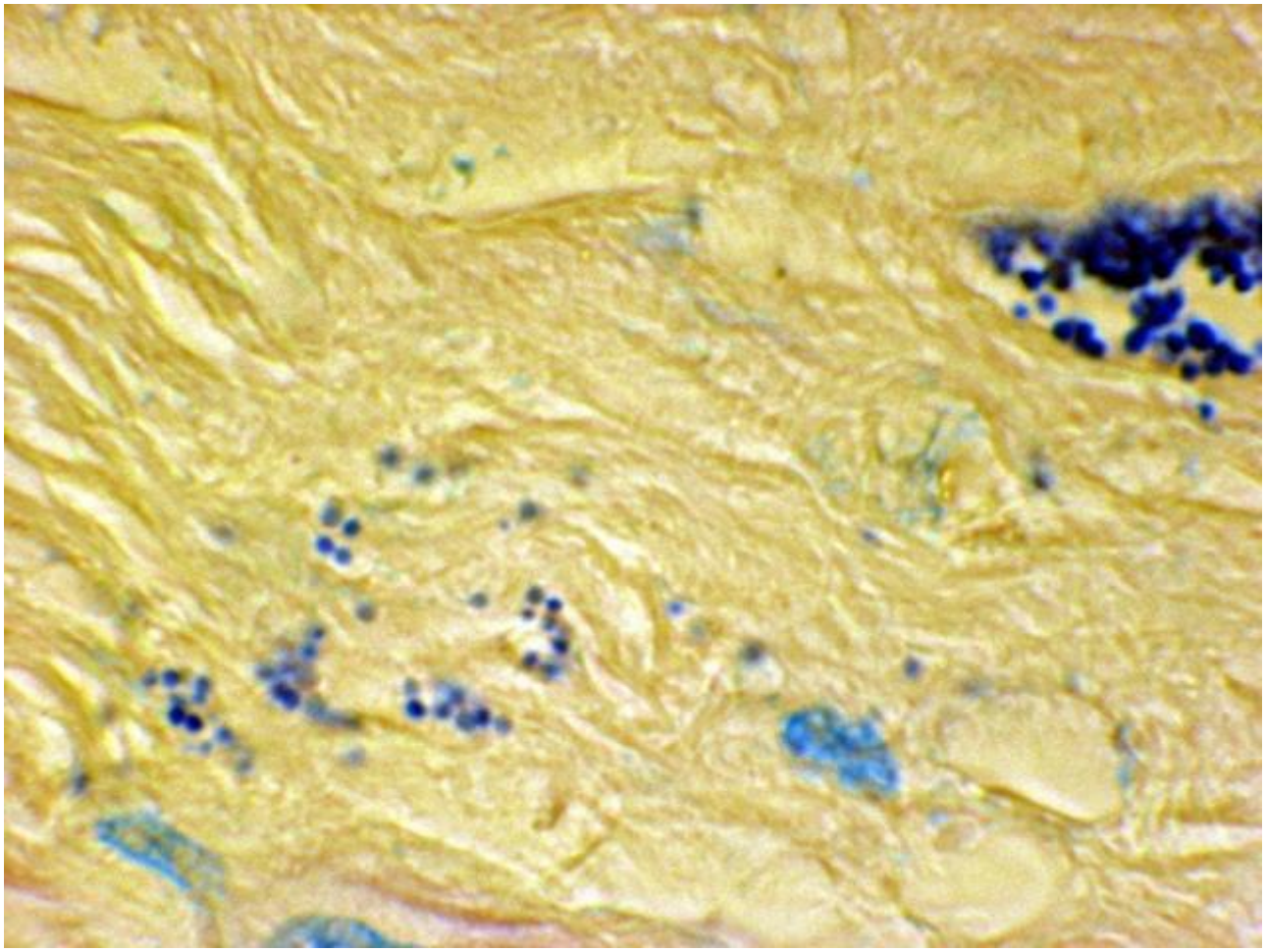

Fig 7. Prostate cancer showing a clump of grape-like coccoid forms on the right and scattered coccoid forms in the stroma on the left. Acid-fast stain, x1000.

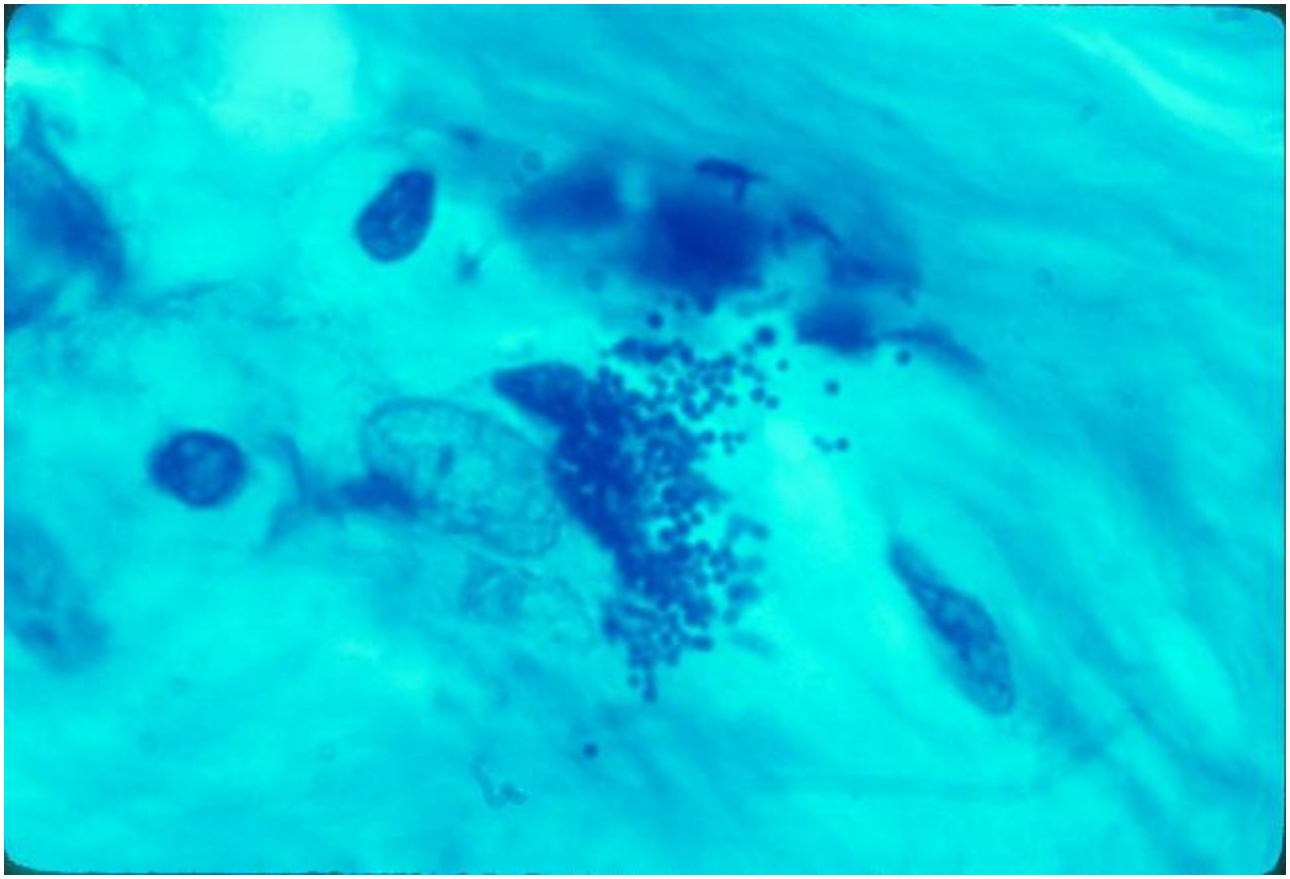

Fig 8. Hodgkin's lymphoma. Variably-sized coccoid forms bursting out of a cell in the connective tissue at autopsy. Acid-fast stain, x1000.

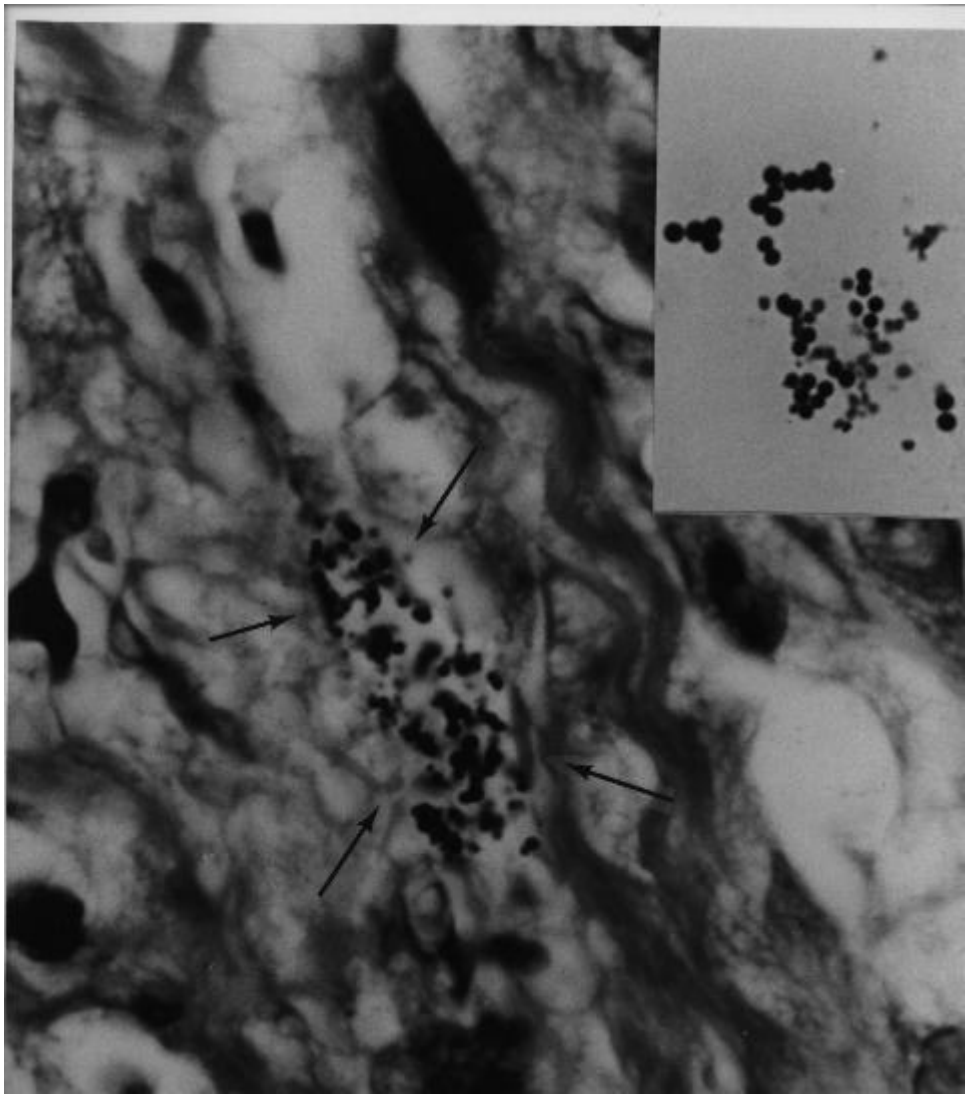

Fig 9. AIDS-related Kaposi's sarcoma of the skin. A collection of coccoid forms in the dermis of the skin. Insert shows Staphylococcus epidermidis cultured from this lesion. Note the similar size and shape of the microbe cultured to that of the coccoid forms seen in vivo in the tumor. Acid-fast stain, x1000.

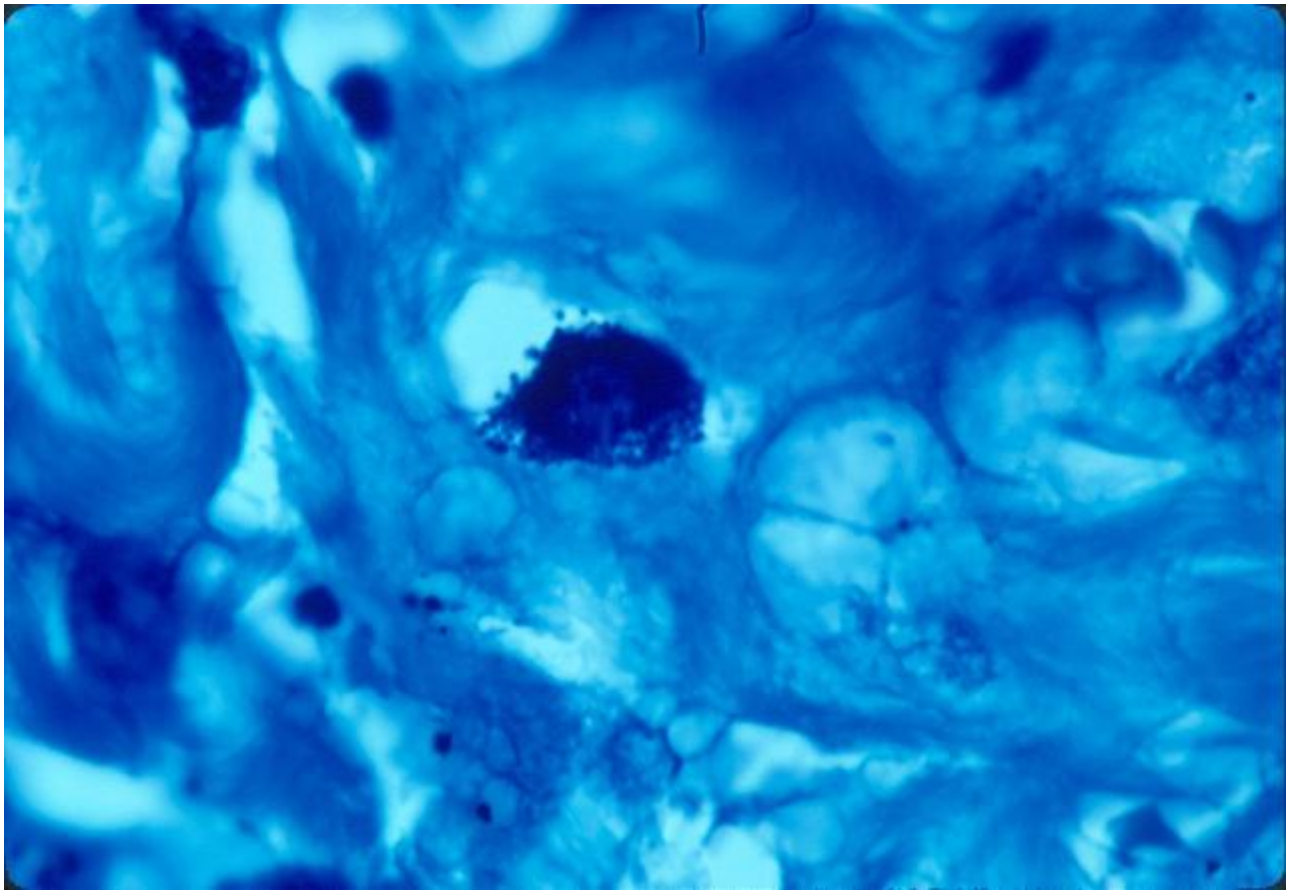

Fig 10. Lung cancer showing a cell tightly packed with coccoid forms. Acid-fast stain, x1000.

4) The cancer microbe cannot be identified as a single "species"

For over a century bacteriologists have classified laboratory bacteria into specific groups and species. However, current genetic testing and molecular techniques indicate that a precise taxonomic classification scheme for bacteria may no longer be tenable. The reason is that bacteria, particularly within the body, are constantly swapping genes with one another. A precise classification of bacteria grown in the laboratory requires stable growth characteristics and morphology which cancer microbes do not possess.

Livingston believed cancer bacteria most closely resembled the fungal-like mycobacteria ("myco" means fungus); and in the 1970s she "classified" them with the "actinomycetes", a heterogeneous group of branching fungal-like bacteria which includes the mycobacteria that cause tuberculosis. In Wainwright's paper on extreme pleomorphism, he notes that actinomycetes are exempt from the monomorphic view. "Exceptions to this rule are accepted in certain so-called higher bacteria, including some actinomycetes."

5) The cancer microbe and the human bacterial microbiome

Cancer microbes are ubiquitous and undoubtedly related to the trillions of bacteria normally contained within the human body. This mass of microbes, primarily bacteria, is now called the

human microbiome. Only recently (beginning in 2008) has this microbial collective undergone preliminary study. Now some microbiologists refer to the human body as a "superorganism." (For details, consult the Human Microbiome Project in the Wikipedia).

Cancer bacteria are also related to a host of equally controversial pleomorphic bacteria that exist in all human blood. These blood bacteria comprise a number of different species including staphylococci, streptococci, cocco-bacillary microbes, and others.

For more than a century, scientists have believed that human blood is "sterile" under normal conditions. Livingston always referred to cancer bacteria as "symbionts." These symbionts are part of the human microbiome. The precise affect of these trillions of body bacteria on human disease has never been studied..

6) The arguments against the cancer microbe

When the bacterial cause of three major diseases (TB, leprosy, and syphilis) was discovered a century ago, it was assumed that bacteria would also be identified in cancer. But consensus opinion was that cancer was neither contagious or infectious; and no consistent species of bacteria could be isolated from cancer tumors. A century later, it is widely believed that infectious agents, particularly viruses, can cause some forms of cancer.

To this day, however, one can encounter scattered reports of bacterial involvement in certain forms of cancer, but this has done little to change the prevailing view that bacteria are not a major cause of cancer. One notable exception has been the recent acceptance of stomach bacteria (called Helicobacter pylori) as the cause of stomach ulcers and secondary stomach cancer. There is even a new pathologic disease called "Russell body gastritis" associated with H. pylori infection. The current view is that Russell bodies are immunoglobulins and the bodies are not microbial in nature, even though they are present in conjunction with H. pylori infection. H. pylori is also a pleomorphic microbe, exhibiting spiral, coccoid , and "degenerative forms" (Anderson and Rasmussen, 2009).

There has also been a great deal of "mycoplasma" research in human disease. Mycoplasma, by definition, are submicroscopic cell wall deficient bacteria. They are the tiniest virus-like forms of bacteria, invisible in the light microscope due to their small size. Their role in cancer is considered speculative. I believe mycoplasma research is closely related to cancer microbe research because cancer bacteria are filterable and are virus-sized in certain stages of their growth. Such forms can only be visualized by use of the electron microscope. (See, "A history of cancer bacteria research" at www.cancerbacteria.com)

7) What causes cancer microbes to act up?

The fact that 100 trillion potentially infectious bacteria can live symbiotically and in harmony with the ten trillion human cells of our body is indeed miraculous. Undoubtedly the immune system plays a major role in keeping these bacteria from becoming microbial terrorists, but every cell in the body must also play a role, however minor.

The first microscopic sign of disease is cellular inflammation; and where there is inflammation there must be bacteria. The induction of pathology is undoubtedly a multi-factorial process, but our body bacteria are indeed opportunists involved along with the cellular changes.

8) Cancer viruses and cancer bacteria

The viral (not bacterial) cause of cancer has been extensively studied for the past half century. Is cancer microbe research related to cancer virus research? We know that bacteria, like human cells, can be infected with viruses. Is there a "connection" between the smallest virus-like forms of cell wall deficient bacteria and "true" viruses? The precise answers must await more recognition and study of the viral-like and filterable growth stages of the cancer microbe.

For example, a newly discovered herpes-type virus has been declared to cause Kaposi's sarcoma, but reports of pleomorphic bacteria in KS have been generally ignored. Viruses have been reported in prostate cancer and breast cancer, but so have bacteria. TB-type pleomorphic bacteria have been reported in AIDS, but HIV is considered the sole virus cause of this immune disease. (See my article, "Do TB-type bacteria cause AIDS?")

9) How can these cancer microbes be eliminated?

Over the years I have been repeatedly asked how to eliminate (or at least suppress) these cancer-associated bacteria. Unfortunately, I don't know. Livingston, who died in 1990, used a treatment regimen which included an "autogenous vaccine" made from the patient's own cancer bacteria. However, she was repeatedly harassed for this by the medical establishment and was often labeled a "quack." In her book "The Conquest of Cancer" (1984), she defended her therapies as ways to stimulate the immune system against the build-up of these bacteria.

Currently, biomedical scientist Trevor Marshall has proposed a treatment regimen for chronic disease, but not for cancer. This "Marshall Protocol" has also been condemned by some and praised by others. Obviously, there will always be resistance and criticism unless a disease treatment is officially approved by the powers that be. Nevertheless, Marshall bases his recommendations, in part, on a deep understanding of the Human Microbiome and its potential to contribute to chronic illness.

Physicians still consider scleroderma an autoimmune connective tissue disease of unknown cause, despite reports of acid-fast bacteria in this disease from three different research groups. We now know that scleroderma patients have a higher risk for cancer. Such a connection would not have surprised Livingston who reported acid-fast bacteria in both diseases. Infection with acid-fast mycobacteria is also common. One-third of the world's population is thought to be infected with acid-fast bacteria that cause tuberculosis; and 31% of people worldwide suffer from some sort of cancer. Over the past two decades the use of long-term, low dose antibiotic therapy seems to help some scleroderma patients. But there are negative reports as well.

10) The Internet and cancer microbe research

As a result of my intense interest in the microbiology of cancer over the decades, I have written five books, thirty medical papers in peer-reviewed journals, and numerous articles posted on the Internet. They are all available for study. Simply Google: Cancer microbe research.

In addition, one can Google the findings of cancer microbe researchers of the past who have inspired me, particularly William Russell, Wilhelm Reich, Raymond Royal Rife, Virginia Livingston, Eleanor Alexander-Jackson, Irene Corey Diller, Florence Seibert, and others.

Their discoveries should be studied by physicians, particularly oncologists, pathologists and microbiologists. Continuing to ignore an entire body of cancer microbe research is a disservice to patients, and not in the best interest of good science.

Alan Cantwell is a retired dermatologist. He is the author of "The Cancer Microbe" and "Four Women Against Cancer," available on Amazon.com. His scientific papers can be found on the PubMed website (Use "Cantwell AR" in the search engine). For his Internet papers, Google: "alan cantwell" + articles. E-mail: alancantwell@sbcglobal.net. Website: www.AriesRisingPress.com