

Pioneers

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About one century and two score ago, two priests, one an Englishman, Needham, and the other an Italian, Spallanzani, entered a grand debate over the simple subject of rainwater. The question: from what origin came the thousands of creatures, only identifiable through the microscopic eye, those infinitely small beings which appeared in rainwater when infused with the air?

Needham, a great proponent of spontaneous generation, had extensively studied some microscopic animalcules and concluded that matter contained a force charged with the task of organizing organic molecules into different embryonic molds or shapes which developed into living entities. Death freed the organic molecules to appropriate raw materials from putrefaction re-forming themselves into a multitude of microscopic animals, fungi, and even larger bodies like earthworms. He argued that the myriad of microscopic creatures came to life spontaneously from flour paste, vinegar, rotting flesh, and other such matter, and sought to prove it with a scientific experiment.

He observed the results of placing organic matter, previously viewed under a microscope and found free of organisms, into sealed glass vases and warming them over ashes. Of course, he produced thousands of the animalcules. This he accepted as absolute proof of spontaneous generation.

The Italian, Spallanzani, also armed with a microscope, strongly disagreed with Needham, stating that the experiment was flawed in two ways. First, the vases were sealed with cork, which is very porous; secondly, there was insufficient heat to kill the seeds which were inside of the organic matter in the vases.

To this end, Spallanzani repeated Needham's experiments using hermetically sealed vases and a boiling water bath of one hour's duration. To his satisfaction no microscopic animals were present in the vases after a reasonable period of time had passed. Needham, stubborn as an Englishman, retorted that Spallanzani had weakened or destroyed the life force within the organic matter by boiling the vases for one hour. He recommended that Spallanzani repeat the experiment with less heat to get the expected result. Instead of disproving spontaneous generation, Needham thought his Italian counterpart proved that excessive heat would interfere with the conversion of organic molecules into life.

The issue was resolved after a four year scientific campaign led by the Frenchman, Louis Pasteur. His experiments proved that germs came from dust in the air, without the benefit of spontaneous generation. He also proved that the air contained an uneven population of germs, with some regions of air relatively sterile and others absolutely putrescent. One of his experiments consisted of a series of sealed flasks containing an easily corruptible liquid that was then subjected to ebullition. The boiling would effectively kill the vital force in the organic material. Then, he suddenly broke the seal on each flask to allow the air with all of its dust to rush into the flasks and the flask was quickly resealed with a gas flame. He then incubated them for a reasonable period of time at 25-30 degrees centigrade. Some of the flasks remained pure while others, according to the place where the air was made available, presented with an overgrowth of animalcules. After many repetitions of this basic experiment, he concluded that dust suspended in the air, and not

spontaneous generation, was the necessary origin of the multitudes of tiny life found in the infusion.

With time came identification of the teeming populations of the tiny life forms, a classification based upon appearance and originating circumstances. The blood and organ tissue of diseased animals were inspected under microscopic circumstance to seek evidence of the invasion of microorganisms. With each new identification, the idea of the holy human body infected with animalicula, being both frightening and striking up much curiosity and speculation in every learned mind, came a surge of support for further investigation. Microbiological research became both the rage and the fashion as the perception of microorganisms causing the majority of the scourges of the day became readily apparent.

Pasteur, by the 1880s, was experimenting with air-dried extracts of rabid animal brain tissues. In these experiments the brain tissue from a rabid animal was injected under the skin of healthy animals. The disease was reproduced under laboratory conditions. Given his previous experience with the effects of heating on germ reproduction, Pasteur reasoned that by carefully drying the disease-ridden brain tissue (under sterile conditions), he could inject the healthy animals with the attenuated extracts and they would be resistant to the bites of the rabid animals who were given to them as companions for a few minutes, and they would also be resistant to inoculation of the deadly brain tissue from rabid animals. In the absence of microscopic identification of the microorganisms growing in the rabid brain tissue, Pasteur had been able to identify still smaller microorganisms which were known as viruses.

With little more than sterile glass flasks, boiling water, and a lifetime of patience, Pasteur and his colleagues of the day armed mankind with important knowledge of both the cause and treatment of many infectious diseases. The evolution of scientific discovery had begun.

Again, in 1895, an American, Daniel Palmer, made the observation that too much or not enough tone was associated with disease. Tone was a concept unfamiliar to many scholars of the day. He further described tone as originating in nerve tension and expressed in functions by normal elasticity, activity, strength and excitability of the various organs. He advanced the theory that body tone could be monitored with the human hands and that excessive or inadequate tone was associated with abnormal psychological function and, furthermore, that such variations in tone should be corrected in cooperation with the natural homeostatic mechanisms innate to the human body.

His observations of body tone in health and disease were never tested by the scientific methods available to the Europeans, Needham, and Spallanzani, nor could they be at the time because of limitations of technology. But armed with the strength of his observations, he taught others the principles of body tone, giving the practice the name of chiropractic, and his students found their knowledge to be verified in their practice upon patients of the day.

From that time, many chiropractors have developed techniques to perfect the application of the original principles and, while some have changed the principles to match a technique or scientific data, none have scientifically validated or disproved the original chiropractic premise of body tone. The chiropractors have been much like the European winemakers of the early 1800s, who knew a great deal about how to make wine perfectly, and they knew about the problems associated with winemaking; however, unarmed with knowledge of the microscopic universe within the bottles, they could not truly fathom the nature of their work. Along such lines chiropractic has developed, until now.

Today we have arrived at the technological ability to study body tone within the scientific model. In

the past, chiropractors have termed abnormal sites of spinal tone as "subluxation" but have overlooked the assessment of abnormal body tone and its causes. Largely satisfied with the ability to "make wine," chiropractors have focused on correction of subluxation. Some have adopted the fallacious idea that subluxation is its own cause, but most have thought, but not tested, that there are a myriad of casual circumstances for abnormal tone, not only in the spine but elsewhere in the body as well (even though both are interrelated).

To this end, we as a profession search for modern pioneers of scientific investigation. Should you be interested in such an adventure call or write me at your earliest opportunity.

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