

JELLYFISH

"There's a sucker born every minute." So said P.T. Barnum. No matter that there's no evidence he actually said it, since evidence itself seems to be in ill repute these days. While binge watching my favorite liberal TV channel MSNBC, I'm often dismayed by commercials for Prevagen, a purported memory booster which contains a protein "**derived from jelly-fish.**" They claim that it's the largest selling brain food and, if so, perhaps that explains why so many of our fellow citizens these days show the political sense of that gelatinous invertebrate. The supporting data is flimsy at best and since 2012 the FDA has been suing the manufacturer for false advertising. Yet, Prevagen is still #1. But as a friend of mine pointed out, jellyfish are the perfect animal for The Age of Trump - to be sure they have no eyes, bones or gills - but also no heart or brains!

God told Moses that "man's days will be 120 years." (Genesis 6:3.) I remembered that dictum when I read an opinion piece in the *NY Times Sunday Review* (March 11, 2018) titled "No Magic Pill Will Get You to 100." The author cited many earnest scientists who self-medicate with various things in order to approach their Biblical term limit. One man swallows bacteria that have survived in the Arctic permafrost for eons while the founder of Bulletproof Coffee recently bragged that he hopes to live to 180 by sipping on his company's signature drink that's made with "Brain Octane Oil." In 1982 Jerome Irving Rodale (née Cohen), founder of a publishing empire dedicated to health and called "the guru of the organic food cult," keeled over and died on the set of Dick Cavett's TV show just after proclaiming, "I've decided to live to be a hundred...I've never felt better in my life." As he took a seat beside the next guest Pete Hamill, he made a snoring sound and stopped breathing. The episode was never aired; he was 72.

Cockeyed attempts to achieve longevity have a long history and among the most long lasting was the craze for yogurt set off in 1904 by the Russian biologist Elie Metchnikoff (1845-1916.) In a public lecture titled "Old Age" the Pasteur Institute scientist stated that aging was caused by harmful bacteria in the gut and urged his audience to boil fruits and vegetables and otherwise prevent noxious bacteria from entering the body. He suggested that beneficial bacteria need to be cultivated in the intestines and that this was best done by eating yogurt or other types of sour milk which contained the bacteria *Lactobacillus bulgaricus*. As he wrote, "Interestingly, this microbe is found in the sour milk consumed in large amounts by the Bulgarians in a region well-known for the longevity of its inhabitants. There is therefore reason to suppose that introducing Bulgarian sour milk into the diet can reduce the harmful effect of the intestinal flora."

Metchnikoff presented his ideas as a hypothesis but the next day Paris newspapers ran with the idea: *Le Temps* wrote, "Those of you pretty ladies and brilliant gentleman who don't want to age or die, here's the precious recipe: eat yaghourt." In the United States a headline in the *Chicago Daily Tribune* declared "Sour Milk is Elixir: Secret of Long Life Discovered by Prof. Metchnikoff." The British Medical Journal wrote, "Yoghourt can be used for an indefinite time without harmful results if the dose is not too large, 2.2 pounds a day should not customarily be exceeded."

To counter sensational claims, the professor published a brochure in 1905 in which he wrote, "Clearly we do not look upon the milk microbes as an elixir of longevity or a remedy against

aging. The question will be resolved only in a more or less distant future.” Nevertheless, Metchnikoff may have succumbed to the madness when he wrote that if science found a way to “cure” aging that people could live 150 years. When he shared the Nobel Prize in Medicine with Paul Ehrlich in 1908 for their pioneering work on immunity the *NEJM* wrote that “everybody in this town has since then been taking Metchnikoff’s milk with a fervor proportionate to the scientific authority of its promoter.”

This set off a mania for buying pots of yogurt and doctors began prescribing “Oriental curdled milk” for anything from gonorrhea to gum disease. When Dr. John Harvey Kellogg, of Cornflakes fame, visited Metchnikoff in Paris, he was impressed by the pitcher of sour milk he saw on the professor’s desk. Kellogg wrote in his own book *Autointoxication* that Metchnikoff has “placed the whole world under obligation to him in his discovery that the flora of the human intestine needs changing. Kellogg had his own unconventional ideas about what kind of change. Since almost all illness originated in the stomach and bowels, he counseled daily yogurt enemas to produce sparkling clean intestines. Virtually all other disease was caused by sexual intercourse and with his brother Dr. Kellogg ran a fashionable sanitarium in Battle Creek, Michigan, where wealthy neurotics were offered a vegetarian diet, exercise and sexual abstinence. The spartan regimen could best be summarized, if it feels good, it’s bad for you.

In the eternal quest for long life or, at least, rejuvenation, nowadays many people gobble “good bacteria” called probiotics. Indeed a number of scientific studies have revealed that the intestinal flora - now called the microbiome - effects the lifespan of - worms and flies. It’s not clear whether it makes them smarter. Among the aquatic models used by Metchnikoff while developing his theories about phagocytosis was our slimy friend the jellyfish. No doubt the Russian was a brainy guy which makes me wonder whether he may have been swallowing the critters?

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