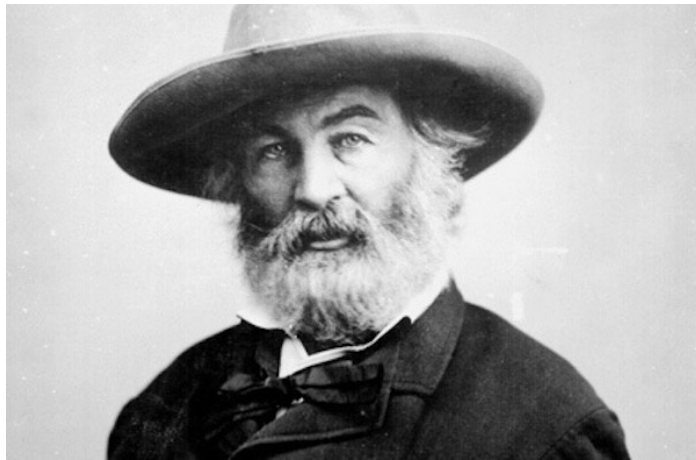


MONKEY BUSINESS

Michael Nevins, MD

A virtual presentation for the Medical History Society of New Jersey. Sept. 16, 2025



From ancient times to the present, human beings have sought to prolong their lives, or at least improve physical and mental vigor or sexual prowess. Many people swallowed aphrodisiacs like oysters or yogurt or ginkgo or, more recently, used supplements like Prevagen and I'm surprised that geniuses like Robert F. Kennedy and Donald J. Trump haven't promoted them — yet.

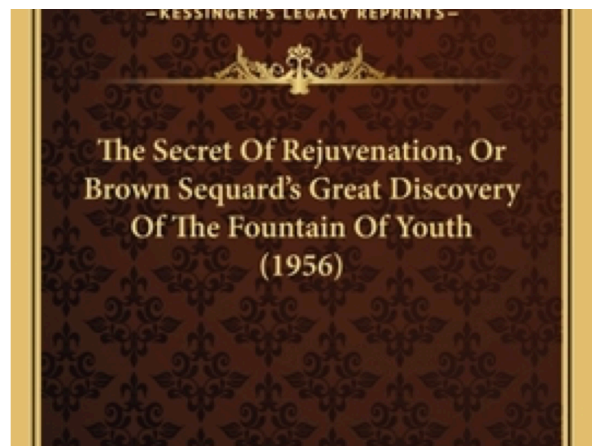
During the late 19th century, **Charles Edouard Brown-Séquard** was a respected scientist who began injecting himself with extracts of ground-up dog and guinea-pig testicles and raved about the results. He was born on Mauritius, a French island in the Indian Ocean, but never knew his American father, a merchant sea captain by the name of Charles Brown, who probably was lost at sea. He was devoted to his mother and was so devastated when she died that in her honor he attached her maiden name to his father's mundane surname Brown and thereby created the memorable eponym Brown-Sequard Syndrome for a traumatic spine injury he described that's known to all medical students — at least it was way back in my day.

Brown-Séquard often used himself as an experimental subject. For example, he counted the number of gray hairs in his beard and measured the force of his urinary stream. Once he nearly died after covering himself from head to toe with varnish in order to investigate the function of skin – fortunately, a quick-witted student saved his life by removing the sealant with alcohol. He worked 18 or 19 hour days, typically going to bed at 8 o'clock in the evening and arising at about 2 in the morning. As he said, "I want to know something different, something better than what average doctors know...if one way doesn't work, try another." He was among the first to appreciate the importance of the adrenal glands and some historians recognized him as the father of experimental endocrinology.

Brown-Séquard led a peripatetic life: mainly in France but with three stretches in America and a period of medical practice in London. He crossed the Atlantic sixty times in an era when that was a long journey and his lectures on brain and spinal cord function drew enthusiastic audiences both in the United States and Europe. Because Brown-Sequard insisted that advances in medicine required animal experimentation, he drew the wrath of anti-vivisectionists but he relished debating his theories. His eccentric personality and lack of social graces and occasional grandiosity suggested a bipolar disorder, but whether true or not, he received numerous honors and memberships in learned societies. When he died in 1894 at age 87, the dean of Harvard Medical School, recalled, "If his reasoning power had equaled his power of observation he might have done for physiology what Newton did for physics." But why this qualification?

The answer was related to the fact that Brown-Séquard had come to believe that if the internal secretions of a ductless gland from a living animal could be introduced into the blood of humans who were suffering from a lack of that secretion, important therapeutic effects would be obtained. All well and good but then he postulated that the testicles manufacture a substance which in some manner energizes the nervous system — moreover, the weakness that accompanies old age might reflect loss of this energizing property but this could be reversed by injecting a testicular extract from animals.

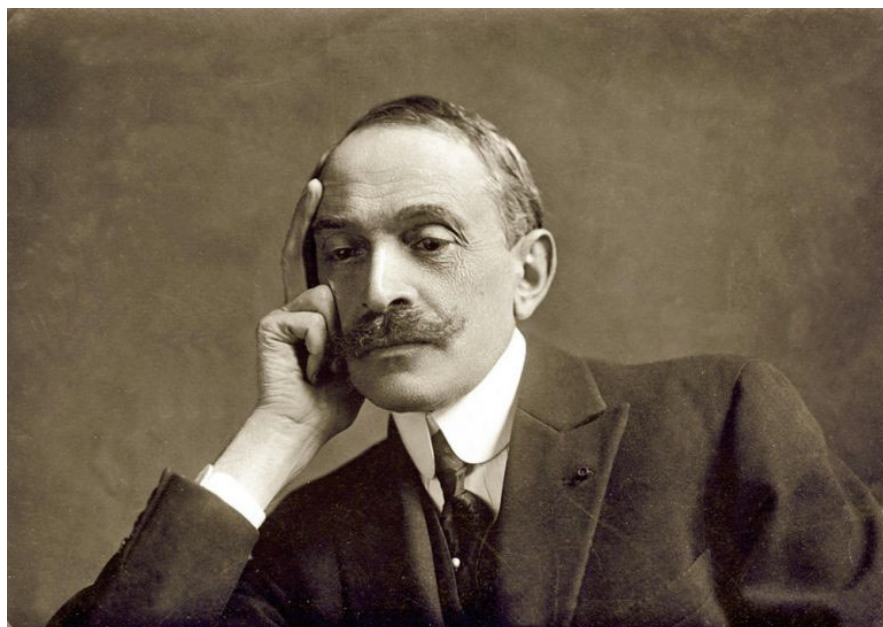
In 1889 the 72 year old doctor read a paper at a scientific meeting in Paris that shocked his audience. He described in it how after preliminary studies in animals, he'd injected under his own skin a solution prepared by grinding-up the testicles of dogs and guinea pigs. After a series of injections over a two-week period, he noted a marked increase in strength and stamina, improved mental energy and more regular bowel movements. As he said, "All has changed, and I've regained the full force that I possessed." The effects persisted for about a month before they wore off. But to Brown-Séquard's dismay, the popular press had a field day distorting his words. He was misquoted as having claimed that he'd discovered the "elixir of life" and inflamed by wild newspaper reports, the public contemplated sexual rejuvenation and longer life.



Opportunists tried to replicate his method of injecting testicular extracts and some reported remarkable effects: the paralyzed could walk, the lame threw away their canes and crutches, the deaf could hear and the blind see. A drug company pedaled an elixir called *Spermine* that included semen, calf's heart and liver and bull's testicles among other ingredients. Brown-Sequard made his data available for all to review and refused to endorse any commercial products capitalizing on his work. It seems that he'd only reported the non-specific effects of a tonic and in other hands when testicular extracts from rams and bulls failed to produce the hoped-for effects, he was ridiculed as a foolish old man and vilified as a charlatan.

Nonetheless, he would provide testicular extracts to physicians at no charge so long as they would report their results to him. Some 1,200 doctors availed themselves of his offer and more than 1,600 people were injected with testicular extracts — but with inconsistent results. About four years after his self-injections, Brown-Séquard died of a stroke so evidently they hadn't extended his own life, but his work had opened a Pandora's box. Testicular extracts may have failed to restore youthful vigor, but in due time even his critics acknowledged that outcomes of what became known as “organotherapy” could be favorable for certain other conditions, e.g. hypothyroidism and sober scientists like Nobel Prize laureate Elie Metchnikoff theorized that organ extracts — especially if combined with Bulgarian yogurt — could rejuvenate if not necessarily extend life.

Serge Abrahamovitch Voronoff was a Russian-born naturalized French surgeon who'd worked for a short time with Brown-Séquard. Although he tried self-injecting his mentor's magic “juice” there was no noticeable effect, but he reasoned that glandular transplants might allow more prolonged production, and after testing his theory on more than 500 rams and goats and a bull, Voronoff reported that older animals transplanted with younger animal's testicles regained strength and vigor; in fact he claimed that he'd created a race of super-sheep.



Serge Voronoff (1866-1951)

In June 1920 Voronoff transplanted thin slices of chimpanzee and baboon testicles into the scrotum of a human and soon this was followed by 40 more xenotransplants. Three years later he drew applause at an international medical meeting in London when he explained that sex drive, memory and concentration all would benefit from monkey testicles and could keep a man healthy and active for a century and a half -- at which time he would simply collapse, presumably from exhaustion! But he had a caveat for women, advising them *not* to undergo a graft of the male sex gland because, "Indubitably, they would acquire new vigor; but, what they might gain as regards strength they would lose in grace."

Claiming that science was close to creating a race of supermen, Voronoff said "I dare assert that the monkey is superior to man by the sturdiness of its body, the quality of its organs, and the absence of those defects with which the main part of mankind is afflicted" He tried reversing the process by transplanting a woman's ovary into Nora, a female monkey by the name of Nora and then inseminating Nora with human semen but with no success. Nevertheless, a novel was written called "Nora, the Monkey Turned Woman."

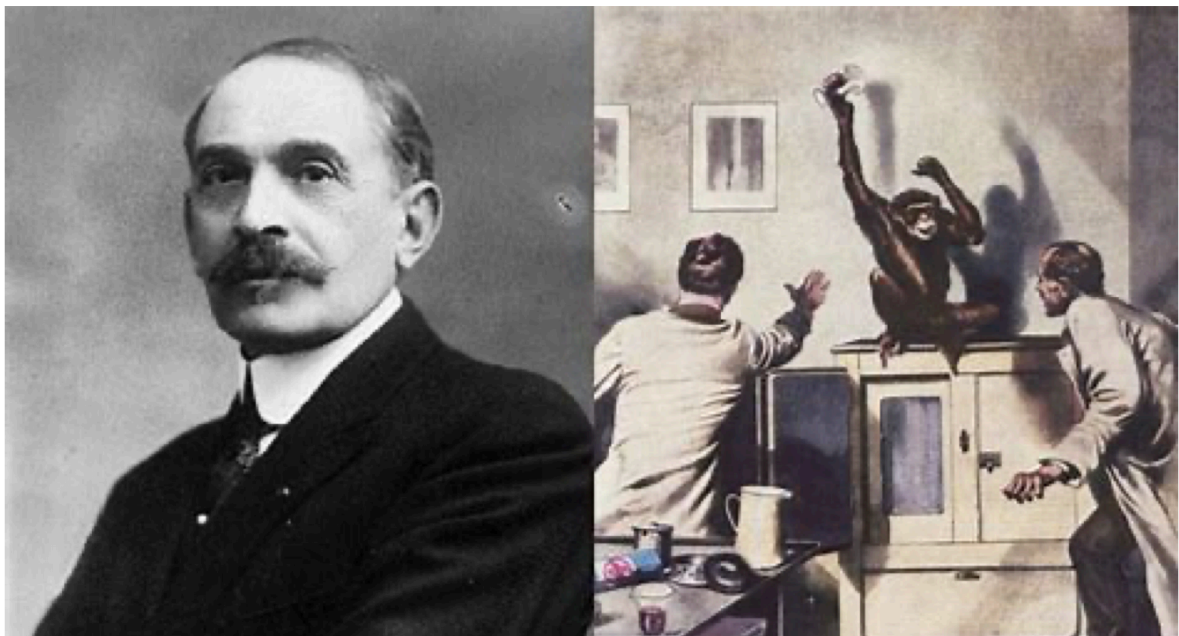


Voronoff explained, "The sex gland stimulates creative activity as well as muscular energy and amorous passion. It pours into the stream of the blood a species of vital fluid which restores the energy of all the cells and spreads happiness." He insisted that any romantic improvements were just a side-effect of a transformation that healed the patient's entire being - a process he called "rejuvenation."

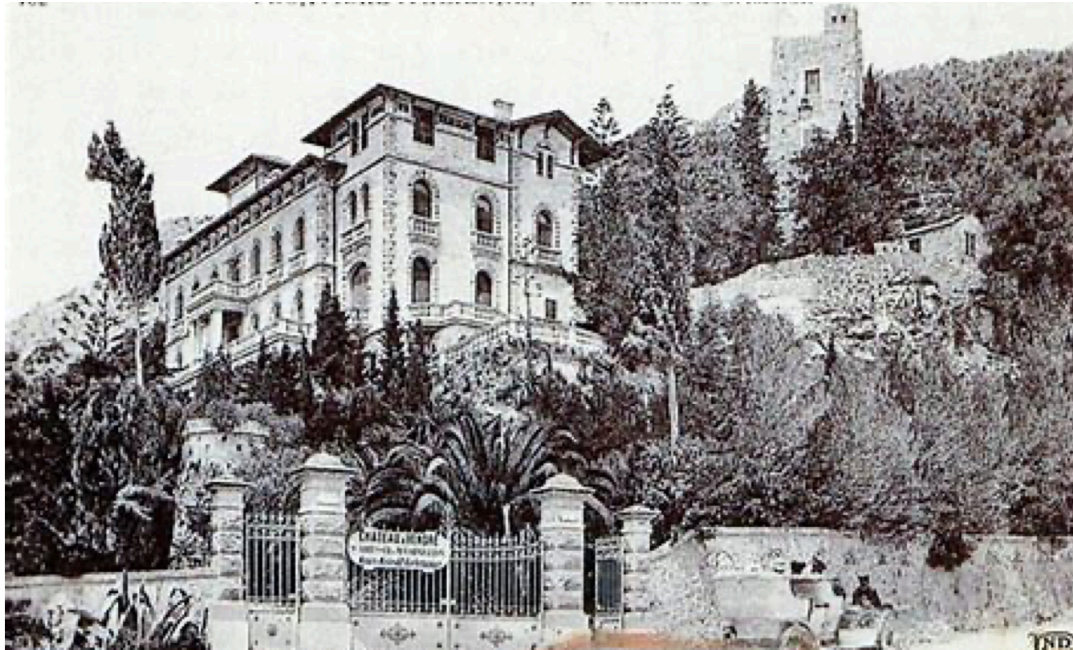
Although they were charged exorbitant fees, celebrities and athletes clamored for monkey glands and between the 1920s and 40s, more than 2,000 patients from all over the world had received monkey testicles. In 1920 Voronoff married a Manhattan heiress Evelyn “Fannie” Bostwick — Serge was her fourth husband and, intrigued by his theories, she funded her husband’s research and even served as his laboratory assistant. Also, she translated into English his book *Life. A Study of the Means of Restoring Vital Energy and Prolonging Life* and wrote in the preface, “It is a book whose message is truly ‘universal,’ for it is addressed directly to every human being who lives, and wishes to live, in the true sense of the word.”



The Voronoffs led a lavish lifestyle with a mansion on Fifth Avenue and also a whole floor in one of the fanciest hotels in Paris where he put up valets, chauffeurs, secretaries — and mistresses.



But within a few years “Fannie” died at age 48 and with inheritance from her estate Serge purchased the historic Grimaldi Castle on the Italian Riviera where he lived and worked for fourteen years.



Serge Voronoff became known as the “monkey gland man” and maintained clinics in France and Algiers, but before long glands were in short supply so to keep up with demand, he opened a chimpanzee breeding center in his villa that he declared would be “a great factory designed to supply spare parts for the human machine.” A huge cage was erected in the castle’s garden for thirty donor monkeys with plans for at least a hundred more and a former circus worker was entrusted with caring for the animals.





Many wealthy celebrities visited the monkey farm — including the ballet masters Diaghilev and Nijinsky, the composer Saint-Saens, actresses Josephine Baker and Sarah Bernhardt, Turkish President Ataturk and the French Prime Minister Clemenceau. The opera diva Lilly Pons visited often and, according to legend, once when she got too close to the cage, a monkey leaned out and kissed her. But results were disappointing, business fell off and before long Voronoff's fame was followed by ridicule. Although he quit performing grafting procedures around 1930, he continued to proselytize and do research at the castle and In 1951 he married again — this time to Gertrude ("Gerty") Schwetz, rumored to be the illegitimate daughter of King Carol of Rumania. In 1937 he published a book titled "Love and Thought in Animals and Men" that he was dedicated "to Gerty who collaborated in this book with all her heart" but, mainly, it was the animals rather than humans who Voronoff wrote about:

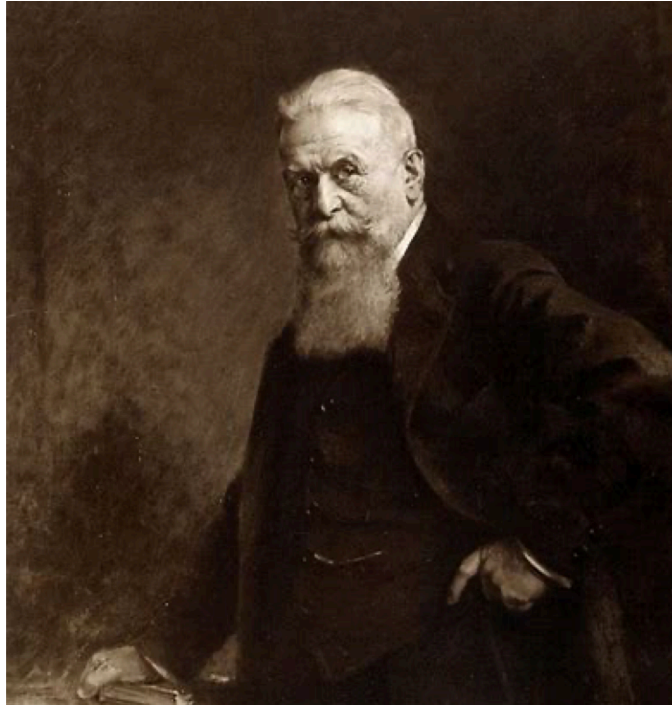
I owe a deep debt of gratitude to animals, who have been my best collaborators. Thanks to animals, I have been able to prove the accuracy of my theories and ideas as to the possibility of counteracting the ravages of old age. To monkeys I am especially indebted, since they have provided me with the wherewithal to enable men and women to realize one of man's oldest dreams, that of postponing old age as long as possible and of retaining vivacity, lucidity and physical energy beyond the normal span.

Serge Voronoff was Jewish, but when World War II broke out he was safe in New York City and when he returned to France after the war, he found that his castle and cages had largely been destroyed by bombing. He died in 1951 at age 87 and today his restored villa near Menton provides luxury living quarters for the ultra-wealthy.

Incidentally, one of our members Jeffrey Levine, who is a specialist in wound healing at Mount Sinai, several years ago spoke about Voronoff at the New York Academy of Medicine — he even visited the former villa on the Italian Riviera. Jeff was interested because in addition to transplanting testicular tissue from apes to men, during World War I Voronoff used testicular pulp on dogs, sheep and goats to accelerate healing. But during the 1930s as Voronoff's rejuvenation work became discredited, so did his research with organotherapy for wound healing and soon it and he were forgotten.

During the Roaring Twenties other doctors also promoted xenotransplants and hormone supplements. One of them, Swiss surgeon Paul Niehans, injected sheep cells into human muscles and promoted this as a cure for cancer, diabetes, heart disease, homosexuality, sexual dysfunction and the like. His patients included Pope Pius XII, King Ibn Saud, Konrad Adenauer and Charlie Chaplin. When Noel Coward learned that Niehans's animal herd included a single black sheep, he remarked, "I see that the doctor is expecting Paul Robeson.

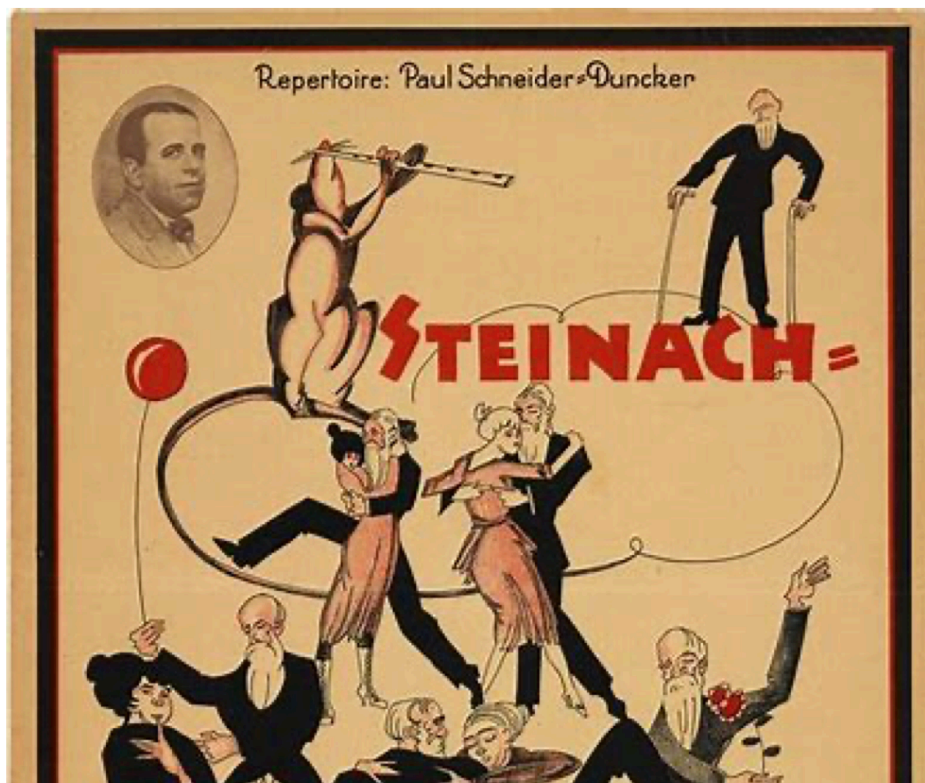
During the same period thousands of older men claimed that they'd regained their virility through a very different kind of medical advance. They boasted that they'd been "steinached," which meant they'd had a simple surgical procedure by a Viennese surgeon by the name of Eugen Steinach in which he ligated one of their seminal ducts. In effect it was a unilateral vasectomy and the purpose was not to prevent pregnancy, but to permit rejuvenation.



He theorized that closing off one duct would stimulate the testes to produce more male hormones and in 1940, in his book "Sex and Life," Steinach described that his patients changed from "feeble, parched, dribbling drones to men of vigorous bloom who threw away their glasses, shaved twice a day, dragged loads up to 220 pounds and even indulged in such youthful follies as buying land in Florida."

Steinach wrote more than 60 scientific books and articles and was nominated for the Nobel Prize eleven times between 1921 and 1938. Among celebrities who raved about the results was the 69 year old Irish poet William Butler Yeats who claimed that the procedure had revived his creative power and provided a "second puberty." But much less impressed was Steinach's good friend Sigmund Freud who underwent the procedure when he was 67. Publicly he said he was hoping to improve his "sexuality, general condition and capacity for work" but at the same time Freud was suffering from squamous cell carcinoma of the mouth and thought that a biologic approach to cancer treatment might help. In fact, he had more than 30 surgical procedures over many years — including Steinach's

vasectomy — but Freud died from the oral cancer in 1939 at age 83 sixteen years after having been “steinached.” The surgeon died five years later in 1944, but for a while the verb “steinached” continued to be all the rage as a foxtrot, especially for old-timers.



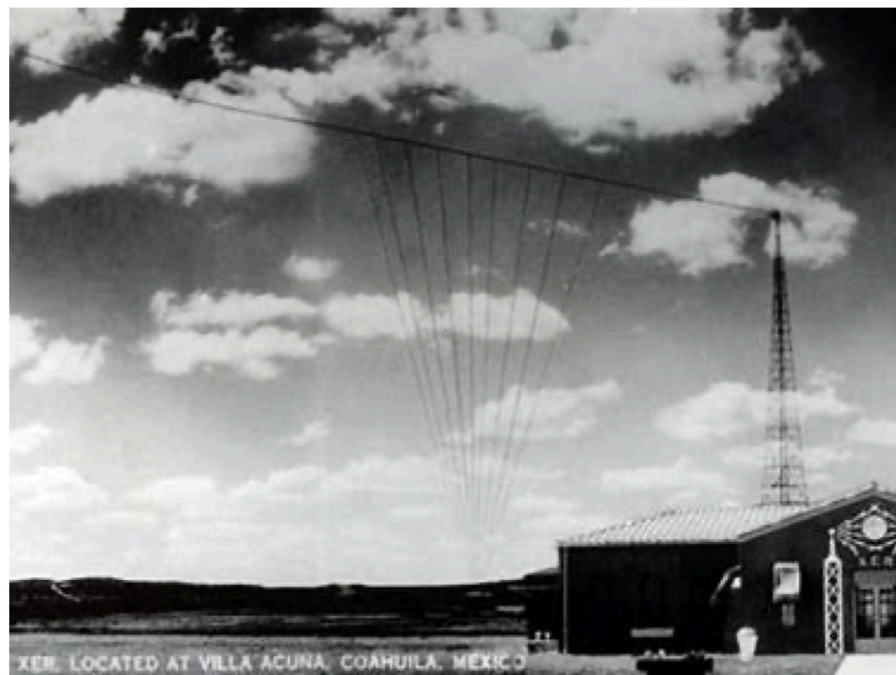
On this side of the ocean, in rural Kansas, a young man by the name of John Romulus Brinkley had taken notice of the European craze for rejuvenation. He'd grown up dirt poor in North Carolina and bought a phony medical degree from a shady diploma mill and then at the age of 22, along with his first wife, created a



medicine show in which they performed song and dance routines and hawked home-brewed tonics.

From that experience “Doc” Brinkley, as he was called, learned how to connect with audiences by appealing to their fears and, like in Europe, the basis of his phenomenal success were testicles — not only from monkeys’ but mostly from goat gonads. Brinkley shamelessly claimed that goat glands could work wonders on 27 different conditions but modestly claimed only 95% success. The self-styled “Ponce de Leon of Kansas” advertised that if a man used his products he’d become “the ram that am for every lamb.” Promoted as “the people’s doctor” Doc Brinkley had “balls” — thousands of them. And he didn’t bother to actually graft them, but merely would drop the animal gonads into mens’ scrotums where allegedly they’d soon become “humanized.” He charged \$750 for goat glands (worth more than \$15,000 in today’s money) but if you wanted real human testes from executed criminals you’d have to pay \$5,000. This Kansas Robin Hood soaked the rich, but he didn’t give back to the poor — there were no freebies; in fact, the indigent could mail-order a Special Gland Emulsion that they could self-administer using a rectal syringe.

Surgery was followed by a series of six injections of a compound he called “Formula 1020.” It was nothing more than a dilute solution of blue dye in water. Morris Fishbein, the long-time president of the AMA, described it as being like “taking a body of water like from Lake Erie, coloring it with a dash of bluing and then selling the stuff at \$100 for six ampules.” Fishbein, who was like Inspector Javert in pursuing Berinkley, described him as being “a charlatan of the rankest sort.”



Doc Brinkley was the first to use radio to speak directly to patients and political supporters alike. He denounced communists and liberals, radicals and elites and in 1931 built a radio station (XER) just over the Mexican border where regulations were lax. This so-called “border blaster” pumped out a million volts AND was the most powerful radio station on earth. Every day Doc would diagnose telephone call-ins sight unseen and then sell the sufferers unnamed

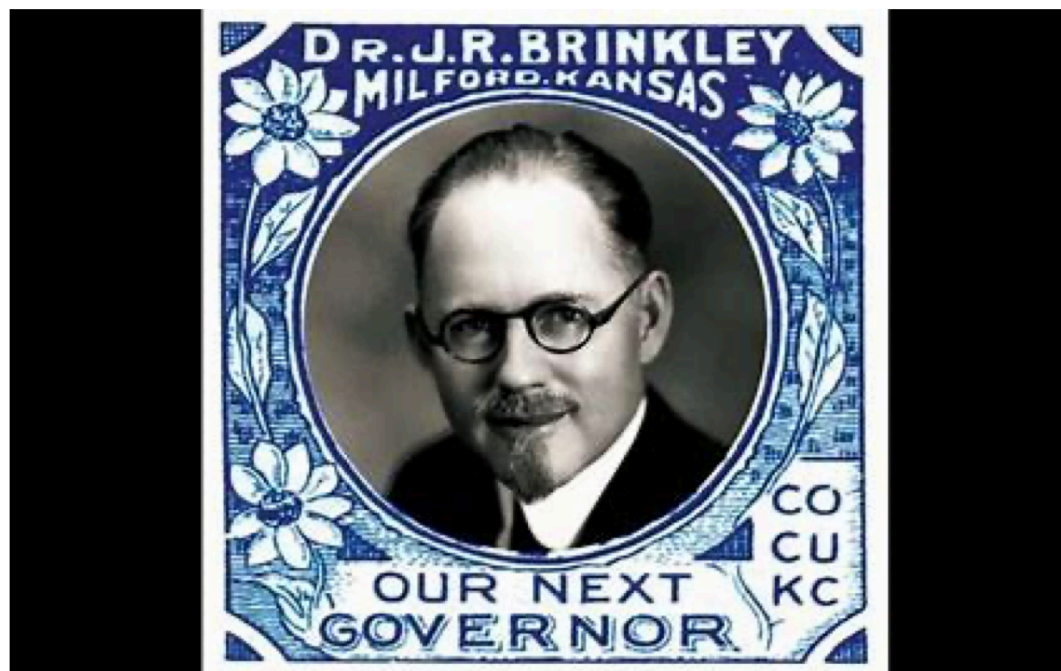
drugs at exorbitant prices while, at the same time, hawking his message of redemption and rejuvenation.

Commercial radio was in its infancy but Brinkley understood the potential of the new medium and, although few stations were accepting advertising, the cornerstone of what he was selling was virility and who could be against that? He would sit at a small table and speak through a gold microphone, his folksy voice coasting across the prairies and way beyond. When he wasn't preaching or selling, the station gave a start to some of the biggest names in country music including the Carter family and various singing cowboys.

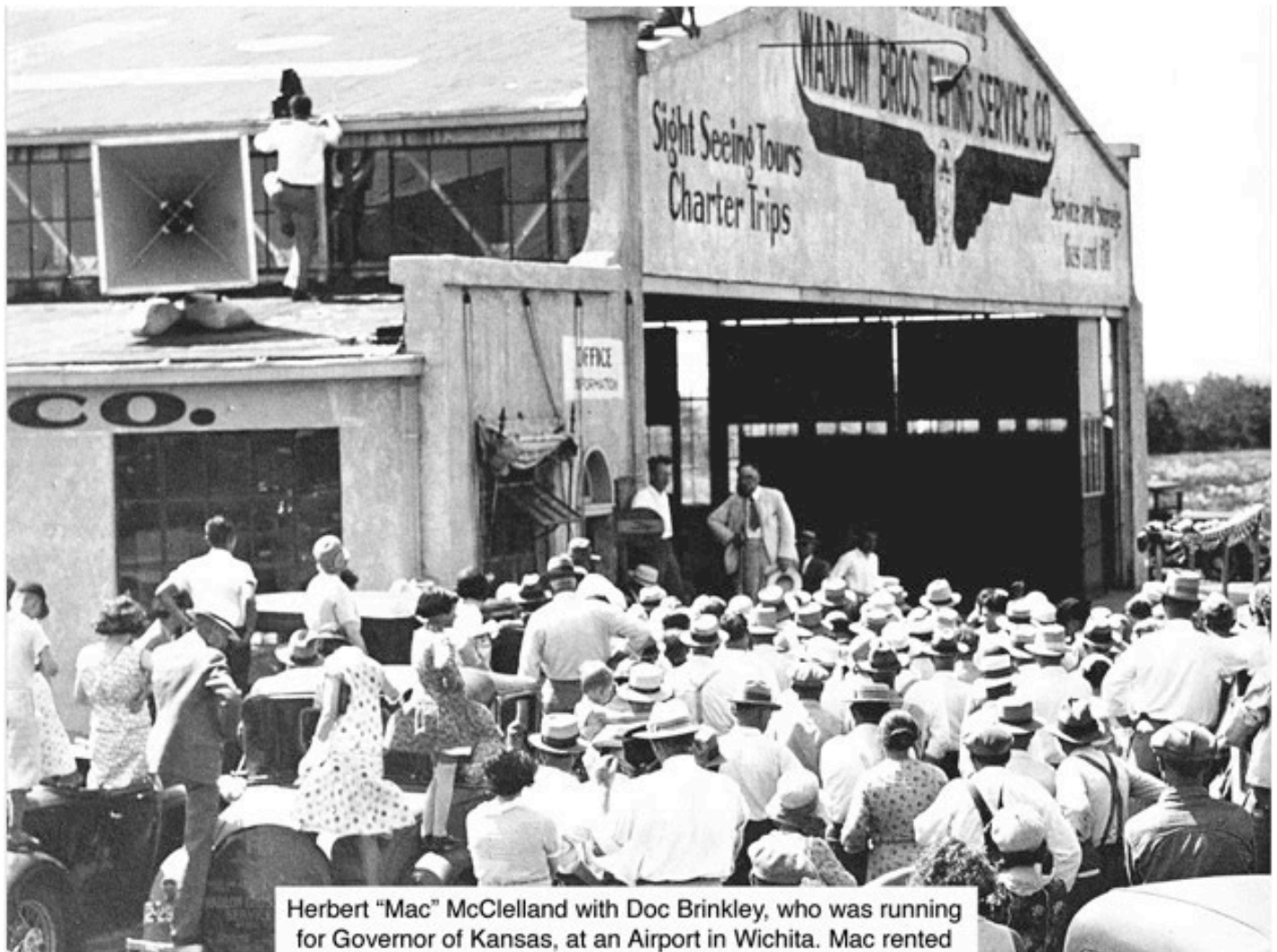


In 1930 Doc's radio station XER was named the most popular in the United States and on Sundays he would deliver sermons and, increasingly, he began to see himself as a Christ-like figure — anyone who dared criticize him would be attacking God. When the Kansas Medical Board conducted hearings about Brinkley's antics, it served to increase his business by making him a martyr. Many Kansans trusted him more than the medical establishment who were aggressively attacking him and the outpouring of support that followed included

many letters asking Brinkley to run for governor — so it was no surprise that five days after the Medical Board revoked his license, Doc announced his candidacy.



Doc's political program was designed to appeal to those disaffected by economic hardships during the Great Depression. He ran as an independent, write-in candidate on a platform of "fearlessness, independence, [and] sympathy for the masses" and campaigned for lower taxes, old-age pensions, workmen's compensation, medical care for the poor, free textbooks for public schoolchildren, increased educational opportunities for blacks and pensions for the elderly and disabled. Many of these populist proposals would soon be echoed in Roosevelt's New Deal and he especially appealed to the immigrant vote by putting German and Swedish-speaking people on his station.

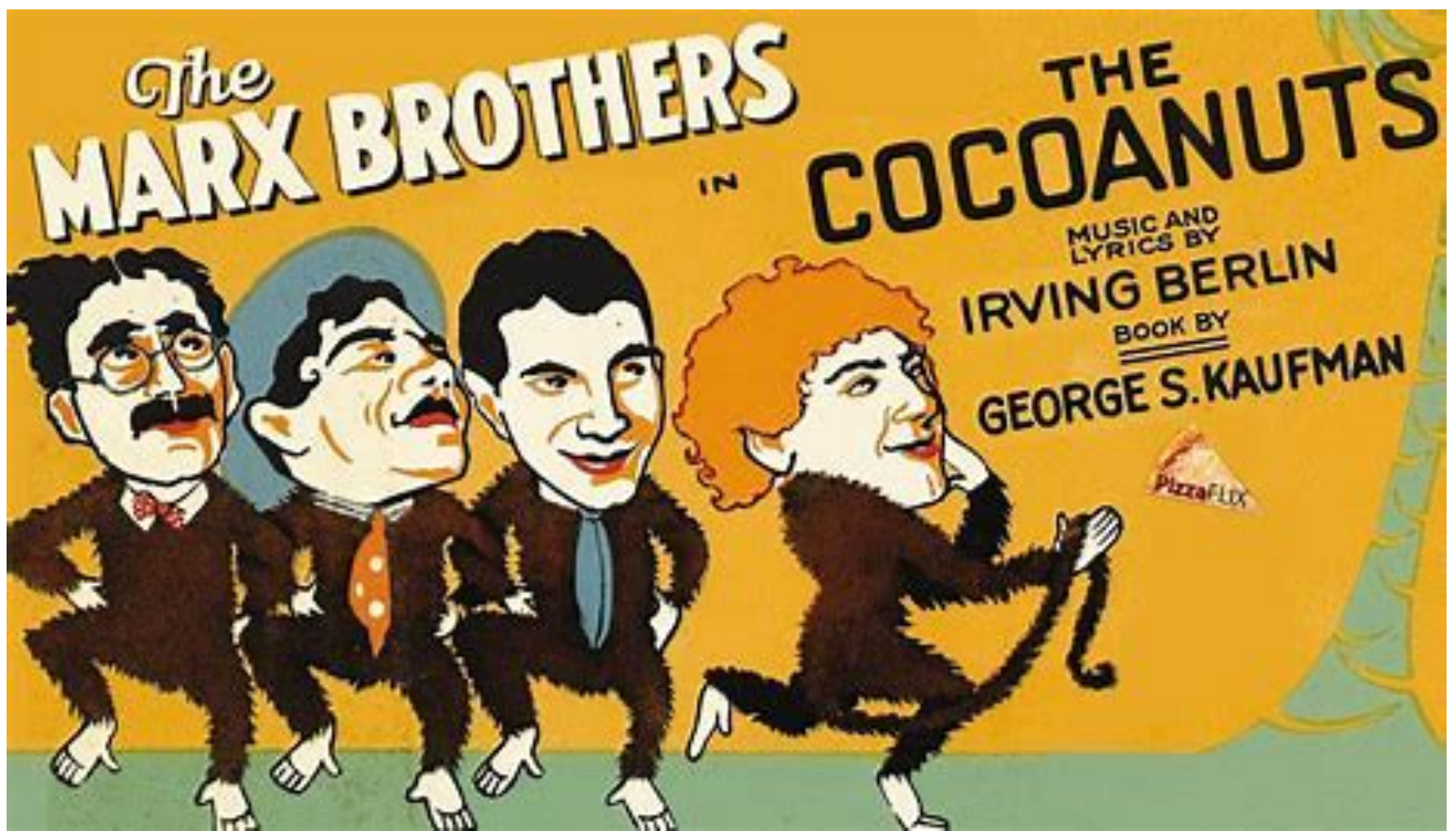


Herbert "Mac" McClelland with Doc Brinkley, who was running for Governor of Kansas, at an Airport in Wichita. Mac rented the sound system for his campaign speech in 1930.

Doc Brinkley became a cult figure and travelled to rallies in his own airplane that previously was owned by Charles Lindbergh. Thousands of country folks would turn out at airports to greet their plain-spoken hero and in his speeches Doc blamed the media and all those who were out to destroy him — sound familiar? He claimed that it was an insult to the good people of Kansas when the opposition described those who listened to his radio programs as the state's "illiterate class." His opponents changed the state's voting rules and he narrowly lost the election and lost again in 1933, this time to Alf Landon. Next he considered running for president of the United States but, feeling betrayed by his enemies, he took to evangelism — and in one sermon declared, "I'd rather save a soul than be president of the United States or even king of the world."

At the height of his career Brinkley amassed millions of dollars, but when he died in 1942 at age 56, he was nearly penniless as a result of the malpractice, wrongful death, tax and fraud suits that had been brought against him. Much of what we're familiar with today about political campaigning can be traced back to this charlatan. His great critic Morris Fishbein wrote "The centuries to come may never produce such blatancy, such fertility of imagination and such ego." But Fishbein was wrong about the timing of that future date because just four years later Donald John Trump was born. Perhaps the author William Alan White said it best: "What a little tinkering with his character might have done...A little more honesty here, a little more intelligence there, would have made him a really great leader of men."

Although today the monkey business which Serge Voronoff began sounds farfetched, in certain respects he was at the forefront of medical science of his time — and he was partially correct when he predicted "there is no doubt that the surgery of the future will consist largely in preserving and, when necessary, replacing the glands of the human body in order to preserve life, vigor and health." He anticipated that, like with the thyroid and adrenal, someday the nature of the mysterious testicular substance would be discovered obviating the need for xenotransplants — and in 1935 testosterone was isolated so before long "the Monkey Gland Man" was forgotten — but not entirely!



Irving Berlin wrote a song called “Monkey-Doodle-Do” that was featured in a Marx Brothers film called *The Cocoanuts*. One of the verse said, “If you’re too old for dancing — Get your self a monkey gland.” And at about the same time a popular new cocktail containing gin, orange juice and absinthe was named “The Monkey Gland.” When I learned about this, I decided to ask ChatGPT to compose a song about The Monkey Gland Man and I’d like to read to you what popped up on my screen within a few seconds.

(Verse 1) The Monkey Gland Man's, in a coat so white, with a scalpel sharp, and a mind alight. He's got a secret, you won't believe, a monkey gland trick up his sleeve. He's cuttin' and slicin', but don't you fret, He's just makin' you live without regret. With a monkey's gift, he'll make you thrive, it's the strangest way to stay alive!

*(Chorus) Oh, the Monkey Gland Man, he'll make you new,
With a little monkey magic, he'll see you through,
He's got the cure for what ails your soul,
Just a little transplant, now you're whole!
In a world where the years slip away
The Monkey Gland Man will make you stay!*

*(Verse 2) From the jungles deep, to the sterile halls, he's got his hands on a
miracle my friend; a long life now, it's the perfect trend! Your wrinkles fade and
your heart beats strong, your energy's back, you can't go wrong. Is it worth it, you
ask, to change your fate? To live forever or just to wait? Are the monkey's eyes
inside your soul? Does his wild spirit take its toll?*

*(Verse 3) But who's to question time, when the body's workin' and the sun still
shines? So if you're feeling weary and old, head on down where the stories are
told, The Monkey Gland Man's got a plan for you, a little snip and your life's
brand new! But when you're walking down that golden road. Just remember
where that gift was sowed...(Fade out) He's the Monkey Gland Man... He'll make
you new...A little monkey magic... forever true.*

Well that's what ChatGPT had to say, but now consider what the *NYTimes* reported just last month (February 4, 2025.) "The Food and Drug Administration has given the green light to two biotechnology companies for clinical trials that will transplant organs from genetically modified pigs into people with kidney failure. If successful, these studies could lead to the broader use of cross-species transplantations, a dream of medical scientists for centuries....."

I wonder what RFK and DJT would have say about all this monkey business — past and present? If they only knew.

(Click on the record below)



HISTORY

This collection of essays is based on the author's experiences during a half century of medical practice as well as insights derived from his extensive studies in history. The central theme is that despite remarkable scientific advances, erosion of the intimate doctor-patient relationship often suggests a large orchestra that lacks a conductor.

Michael Nevins is a retired internist and medical historian, now in his 90th year, who practiced in New Jersey for more than four decades. He is past president of the Medical History Society of New Jersey, governor of New Jersey's Chapter of the American College of Physicians, author of more than a dozen books and recipient of awards recognizing his contributions in bioethics, medical education and medical history.

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