The lethal legacy of early 20th-century radiation quackery.

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LAS VEGAS - Not long ago, curator Natalie Luvera began to worry about the strangest item in the National Atomic Testing Museum's collection of artifacts - a tiny 1920s device designed to restore lost manhood by irradiating the manliest of human body parts.

Was the gold-plated "scrotal radiendocrinator" still dangerous after nearly a century? Luvera tested it with a Geiger counter, got a worrisome reading and called in a radioactivity response team to double-check. "They came down and said, 'Nope, you shouldn't have that here.' "

To the curator's relief, the team banished the intimate irradiator to a desert grave. It's now buried with other atomic waste at a disposal site near Nevada's infamous Area 51, the secretive military facility near Las Vegas associated with UFO conspiracy theories. But countless similar artifacts remain in museums, private collections and junk drawers, all reminders of our bizarre and sometimes-fatal love affair with what many believed to be the healing powers of radioactivity.

So about Area 51 and all those UFO conspiracy theories . . .

Some are stored carefully by museums and interested hobbyists who snap them up in online auctions. Others lurk under our noses until they're discovered.

"There are loads of these items still out there, including in people's basements and in their homes," said Carl Willis, a nuclear engineer in Albuquerque, New Mexico, who collects radiation artifacts.

The Las Vegas museum's scrotum irradiator, for example, was uncovered by a man who discovered it in a relative's possessions and carefully donated it to the museum in a lead-lined suitcase.

Now, of course, we know about the true dangers of radioactivity. But during the early decades of the 20th century, not long after its discovery, radiation was hot in more ways than one.

"There was this sense that radiation is a very powerful but poorly understood force in the universe, and maybe it's the ultimate healing force," said Cleveland radiation oncologist Roger Macklis, who has studied radiation quackery.

It didn't take long for hucksters to turn radiation into a must-have. In the United States and Europe, radioactive products from the 1920s through the 1940s included toothpaste, hair cream, cosmetics and even suppositories. All are collectibles today among hobbyists who are fascinated by the American obsession with radiation.

Some "radium" products actually included radium and set off Geiger counters, then and now. Others didn't, but their makers still tried to capitalize on the hoopla around the supposed powers of radiation.

"During this period of history, the price of radium was quite high," Willis said. "Inexpensive radium remedies might contain none at all, and the assumption was that the consumer would have no expectation or capability of verifying the claim."

In Albuquerque, for example, the National Museum of Nuclear Science & History's collection includes radium-free products such as Radium Brand Creamery Butter, Radium Spot Remover and Radium Hand Cleaner, with a worrisome motto ("Takes Off Everything But the Skin").

Other products included only a bit of radium. For example, Willis' collection includes a tube of hemorrhoid cream called Klein's

Radium Salve.

"A product like that was not radioactive due to any underlying theory of how radioactivity might help somebody," Willis said. "It had some radium in it so they could say it was radioactive."

But other products packed an actual punch of radioactivity - and still do. "The more expensive offerings could contain a lot of radium, possibly measured and verified by some respected independent technical authority," Willis said.

Take the scrotal radiendocrinator that Willis owns, for instance. Unlike the Las Vegas museum, he has not disposed of this unusual artifact. He bought it in 2015 for $650 from an auction of scientific antiques in Pittsfield, Massachusetts.

"I had a friend who lived in the area go and check it out and make sure it was authentic and in good condition, not damaged or destroyed or without the active material," he said.

As Willis' blog explains, the device's radioactivity comes from tiny pieces of paper "uniformly loaded with radium sulfate." They're enclosed in a small, embossed metal case that's about the size of a credit card and includes a mesh window.

The device, intended to be placed in a special jockstrap, sold in the 1920s for as much as $1,000. "Wear at night," the instructions suggested. "Radiate as directed."

Willis said his device still gives off a tremendous amount of radiation, about 1,000 times the amount emitted by a 20th-century "radium watch" that glows in the dark thanks to radium paint. That is enough radioactivity to potentially cause temporary sterility, cancer and burns if used as directed, he said.

"The peak activity would have occurred when the device was a mere 3.5 years old, but it is still perfectly capable of literally tanning someone's hide if they wear it as directed for a week," he said.

While he doesn't use it for its original purpose, Willis does store the scrotal radiendocrinator in an outbuilding. "It's in a bunch of plastic bags inside a hermetically sealed plastic container, which I keep in an inch-thick lead box surrounded by lead bricks."

The device was the brainchild of an extraordinary quack named William J.A. Bailey, who liked to describe radiation as "eternal sunshine." He also hawked bottles of Radithor - "certified radioactive water" - that were touted as a cure-all for disorders such as impotence and fatigue.

"Bailey was a true believer, somebody who thought genuinely that his products were medically beneficial," Willis said. But they could actually kill, as a middle-aged New York tycoon named Eben Byers discovered after guzzling multiple bottles of Radithor a day. In 1932, he died of radium poisoning that ravaged his jaw, skull, brain and internal organs.

As Cleveland oncologist Macklis wrote in a 1993 Scientific American article, the death of Byers sparked a federal investigation and "helped to create the presumption that medicines are dangerous until proved safe."

The "healthy" reputation of radiation had already suffered another serious blow when young women began dropping dead of radium poisoning in New Jersey, the victims of their work - carefully painting the dials of radium watches.

Products from the era are easy to find today. Radium water crocks, pottery that was fired with radioactive material and designed to irradiate drinking water overnight, sit in museum collections from the District of Columbia to Minneapolis and Portland, Oregon. Even the National Atomic Testing Museum in Las Vegas has a "Radium Ore Revigator" with an inscription that touts it as "the perpetual health spring in your home."

While curator Luvera is hesitant about the risk of radioactive artifacts, she's comfortable storing the jug since it emits radiation only if its top is removed. It's not normally displayed to the public.

She recently showed it to a reporter who took care not to fill it or follow the instructions: "Drink freely when thirsty and upon arising and retiring. Average six or more glasses daily.'"

Federal officials accused the Revigator manufacturer of false advertising in the early 1930s after it had sold thousands of the jugs, according to Oak Ridge Associated Universities, which has a collection of radium quack products.

The company faded away amid bad publicity, as did makers of other radium products during the 1930s and 1940s. At last, radiation had lost its healthy glow.

Should people worry about century-old radioactive devices that may be lurking in their attics and closets? What about museum employees and collectors who work near such objects?

In 2015, Oregon Health Sciences University tested the Revigator in its medical museum and reported that while it emitted a low level of radiation, someone would have to sit next to it for a year to face a potential risk of harm.

For his part, while he's very cautious about storing radioactive artifacts himself, Willis believes that "there's probably no detectable risk as long as people are not using the items as originally intended."

In other words: Don't radiate as directed.