

1887

Dr. John Briggs Eats Some Peyote

It seemed to me my heart was simply running away with itself, and it was with considerable difficulty I could breathe air enough to keep me alive. I felt intoxicated, and for a short time particularly lost consciousness.

—John Briggs, May 1887

Peyote was well known in Ignacio Sendejas's world, used within a variety of Indian communities from west-central Mexico into what is today the southwestern United States as a sacrament, and used by curers and botanists in the borderlands for any variety of ailments. Outside of the borderlands, however, Euro-Americans had scant knowledge of the cactus. The doctors and scientists in Mexico City who were then endeavoring to create a modern state had little interest in things tainted by indigeneity, and most could not have identified peyote or discussed its properties in any detail. Beyond Mexico the classificatory challenges were even greater, in part because the name *peyote* had long been associated with at least three different plants. Early in the colonial period, Bernardino de Sahagún classified two plants as peyote, one identified with Xochimilco and the other with Zacatecas. Decades later Francisco Hernández coined the scientific term *peyotl zacatensis* to describe the cactus that we know today as peyote. Later still, when nineteenth-century North American and European botanists began to classify the myriad cacti found in Mexico, they identified no less than four species of cactus that went by the name *peyote*. Probably the first to correctly identify the cactus associated with indigenous ritual life was the French botanist Charles Antoine Lemaire, who in 1840 introduced the name *Echitiocactus Williamsii* for reasons that remain in dispute to this day

(it was probably named for C. H. Williams, a British official who was at one time ambassador in Bahia, Brazil).

During these same years the proliferation of colloquial names for peyote signaled its growing use in the United States. *Bartlett's Dictionary of Americanisms* reports it as “whisky root” in its 1860 edition, indicating that “the Indians eat it for its exhilarating effect on the system, it producing precisely the same [effect] as alcoholic drinks.”¹ Traveling through south Texas in the late nineteenth century, the Norwegian ethnographer Carl Lumholtz was told that members of the Texas Rangers used mescal buttons (the local term for peyote) to stave off their hunger and fatigue when taken prisoner during the Civil War, soaking the buttons in water and calling them “white mule.” Others reported that residents of the border regions where peyote grew abundantly used it for headaches, open sores, and rheumatism.²

Peyote entered North American pharmacology in May 1887, when Dr. John Raleigh Briggs, a doctor living in Fort Worth, published an account of his experiment with the cactus in *The Medical Register*. His article, “‘Muscale Buttons’—Physiological Effects—Personal Experience,” describes symptoms that would be repeated again and again as medical researchers experimented with peyote.³ After taking the “mescal button,” Briggs’s pulse rate jumped from 60 to 90, and he began to breathe more rapidly. His head began to ache and he felt dizzy as his pulse rate reached 160 beats per minute. He described his distress:

The peculiar and dazed feelings I then experienced, together with alarm, prevented my taking notes on respirations, and therefore don’t know the number, but they had certainly still further increased. It seemed to me my heart was simply running away with itself, and it was with considerable difficulty I could breathe air enough to keep me alive. I felt intoxicated, and for a short time particularly lost consciousness.

Briggs then rushed to the office of his friend, Dr. E. J. Beall, who prescribed large doses of smelling salts and whisky. After taking a long walk, he began to recover his senses, and within eight hours the only remaining symptom was a lingering depression, which was gone by the next day. Looking back, he was chastened by the experience. “I believe if prompt aid had not been given me I should have died.”⁴

Briggs’s account was momentous in two ways. First, it marked the beginning of a period in which the effort to identify peyote shifted from traditional botany (a system of classification in which the cactus was identified by its physical appearance and habitat) and toward chemistry

(in which the key identifying markers would lie in the physical effects that peyote produced in bodies). Second, a reprint of the article in *The Druggists' Bulletin* caught the attention of George Davis, secretary and general manager of Parke, Davis and Company, who convinced Briggs to send him a cigar box filled with peyote buttons in June 1887. Frank Augustus Thompson, a chemist at the company, managed in July 1887 to prepare alcoholic extracts from the buttons, revealing numerous alkaloids. Over the next few years he and others in the company undertook numerous attempts to market peyote as a cardiac stimulant.⁵

As luck would have it, around this time a prominent German toxicologist named Louis Lewin visited the company's offices in Detroit. Either Thompson or someone else at the company gave a few buttons to Lewin, who took them home to Berlin. He in turn showed the buttons to Paul Cristoph Hennings, a botanist at the Berlin Botanical Garden, who identified them as a new species of anhalonium cactus. He named it *Anhalonium Lewinii* in honor of Lewin.⁶ (The name would not stick. In 1894 US botanist John M. Coulter created the genus *Lophophora* and called peyote *Lophophora Williamsii*. This classification persists to this day.)⁷

Working in his Berlin lab with the samples from Detroit, Lewin extracted his first alkaloid in 1888. He called it *anhalonine*, and after testing it on animals, he and Henning penned the first scientific paper on peyote. They found that anhalonine had a strong effect, causing agitation and muscle cramps in the test animals. The same tests also suggested that it was toxic in large doses, similar to strychnine. Human tests indicated that it produced no visual hallucinations, which suggested there were other important alkaloids yet to be extracted from the cactus.

Working in fits and starts because of the irregular supply of peyote, over the next several years Lewin and his colleagues in Germany would slowly begin to unpack the botanical mysteries of the cactus. Arthur Heffter at the Pharmacological Institute of the University of Leipzig identified pelletine in what was probably *lophophora diffusa* in 1894. Anhalonine had shown no effect on human subjects, but fifty- to sixty-milligram doses of pelletine made them sleepy without seeming to produce side effects.⁸ Still, subjects given the drug did not hallucinate, which meant that the researchers had still more work to do in identifying the most powerful alkaloids in the cactus.

In 1896, and this time definitely working with *Anhalonium lewinii*/*Lophophora williamsii*, Heffter identified four distinct alkaloids (mescaline, anhalonine, anhalonidine, and lophophorine)⁹. After conducting some self-experiments with mescaline (measured out so that his dose

was the equivalent of about five buttons), he concluded that it, and not anhalonine or pellotine, was the most important alkaloid in the peyote cactus.¹⁰

For his self-experiment Heffter made an extract residue by percolating the dried material with 95 percent alcohol and then evaporating the alcohol under vacuum. The extract was then placed on paper wafers to make it palatable. Heffter consumed the extract over half an hour between 10:15 and 10:45 in the morning. He experienced a series of common effects, including a change in pulse rate, nausea, a headache, dizziness, blurred vision, and clumsiness, but was particularly impressed by the visions, “richly colorful pictures . . . which consisted partly of tapestry patterns and mosaics, and partly of winding colored ribbons moving with the rapidity of lightning.” Heffter also experienced auditory hallucinations and other visions, which included shooting lights like “fireworks,” and “thick purple intertwined roots and fibers on a dark, glossy background.” He reported that his intellect remained unimpaired during the experiment, but that he experienced “the loss of the sense of time: I estimated a few minutes as lasting 1/2 hour. The 10-minute-long walk from my house to the laboratory seemed endlessly long.”¹¹

Mescaline, denatured, purified, and distinct from peyote, was clearly a powerful drug. What remained was the question of whether this was something useful or merely interesting. It seemed obvious how one might position pellotine as a therapeutic drug, as its direct applicability as a sleep aid with no side effects was limited only by the rather high cost of extracting the alkaloid from *Lophophora diffusa* (the introduction of low-cost barbiturates in 1904 killed the market for pellotine). Heffter’s mescaline visions, by contrast, did not portend obvious therapeutic uses. The specificity of his descriptions of the mescaline effect suggested that it was highly idiosyncratic, linked to the particular history and experiences of the person who took the drug. These types of experiences can be revelatory at an individual level but are not clearly useful when commercializing a drug. Pharmaceutical companies depend on a consistent effect from one patient to the next.

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Back in the US, peyote research was faring no better. Working in laboratories that were inferior to their German counterparts, chemists at Parke Davis never made any progress in identifying the alkaloids in the peyote cactus. Peyote remained almost unknown among North American scientists until November 1891, when James Mooney, an employee

of the Smithsonian Institution's Bureau of Ethnology, made a presentation at the Anthropological Association in Washington about a peyote ceremony he had witnessed the previous summer among the Kiowa Indians of Oklahoma. The ritual was relatively new to the community, having been introduced by proselytizers from the Comanche tribe, and Mooney was the first white man to observe it. At that point he had not taken any mescal buttons.¹²

His first personal experience with peyote came the following summer when, on the advice of his informants, he ate some buttons to remain alert through the all-night Kiowa ceremony. Wanting to understand its effect further, two years later he purchased a large quantity of peyote from Comanche purveyors and took it back to Washington for study. He gave about half to Harvey Wiley, chief chemist at the US Department of Agriculture, who promised to undertake chemical tests. Another large sample was given to D. W. Prentiss and Francis Morgan of the medical department of the Columbian University in Washington (now George Washington University), who promised to test the buttons on human subjects. Mooney also sent a few buttons to the famed Philadelphia neurologist Dr. Silas Weir Mitchell.¹³

Wiley tasked Ervin E. Ewell at the US Department of Agriculture with isolating and analyzing the active elements in the mescal buttons, but Ewell (seemingly unaware of the growing record of German publications on the cactus) decided to focus his energies on extracting resins from the buttons instead of isolating the alkaloids. The decision was misguided, but it may also have been strategic. He had the capacity to extract the resins, but his rudimentary equipment and poor technical skills made it impossible for him to isolate the alkaloids in his samples. In 1897, after three years of inconsistent results, the USDA abandoned the tests.¹⁴

Ewell did not abandon the project before he tried the buttons himself. Wiley, who tried to discourage him, recounted the experiment years later.

So he took the buttons home with him and he chewed them in the manner described by Mr. Mooney as being practiced by the Indians; he chewed them until they formed a bolus, and then swallowing the bolus. . . . About 2 o'clock on Sunday morning the condition of Mr. Ewell became so alarming to his roommate that he came with Mr. Ewell to my residence and awakened me, the laboratory mate feeling he could not take the responsibility any longer. . . . It was 48 hours before he could sleep after he had taken these beans and after the excitement had gradually passed away. He was constantly talking and saying, "Oh, how beautiful; oh, how splendid; how magnificent." I was particularly struck with this expression. I knew something of

his views and that he was a great admirer of Robert G. Ingersoll. One of the things he said was, “Oh, I wish I could talk with Ingersoll just for a minute; I could convince him that there is a heaven. I see it. I see the angels in the streets of gold.”¹⁵

Alarmed by Ewell’s experience, Wiley concluded that the mescal buttons produced delusions, were a dangerous drug, and should be closely regulated.

Prentiss and Morgan took a somewhat more systematic approach in their study of the effect of peyote on humans, seeking to experiment in a way that was informed by the practices of the Kiowas. They believed that the Indians were “addicts” whose “tolerance” for significant quantities of peyote was “a result of both his own habitual use and of the hereditary influence received by him from his progenitors,” yet they also believed that the rituals surrounding peyote use were important to understanding the effect. According to their 1895 report in the *Therapeutic Gazette*, they sought as much as possible to replicate those rituals (holding ceremonies at night, choosing only male subjects, and including drumming) over the course of their six experiments, but reduced the quantity of mescal buttons to what they felt was a reasonable level for white subjects. They found that between 3.5 and 7 (instead of the 10–12 taken in Kiowa ceremonies) could “produce a marked effect,”¹⁶ including visions, colors, euphoria, lucidity, loss of conception of time, lowered heart rates without any effect on respiration, dilation of pupils, varying levels of muscular depression, partial anesthesia of the skin, and an inability to sleep. Prentiss and Morgan also found that the drumming enhanced the beauty of the visions that their subjects experienced.

That said, all the results were not entirely positive. One subject grew paranoid, thinking the others were trying to kill him. Another became unable to walk without assistance. Yet another reported a dual personality while under the influence. They also found that pleasure had an inverse relationship to muscular depression, and that some of the test subjects experienced headaches that persisted for some time after taking the mescal buttons. They did report that (as with the Kiowa rituals) there seemed to be no persistent aftereffects.¹⁷

The word Prentiss and Morgan used to describe the effect—*intoxication*¹⁸—reminds us of the conceptual limitations within which they worked. Lacking a vocabulary to describe what many today call psychedelic involvement, or a trip, they resorted to language that more easily aligned with drunkenness, even as they seemed to acknowledge the inadequacy of the term. Their tests suggested that peyote had some similarity

to *Cannabis indica* (which was then in use for a variety of purposes), but while *Cannabis indica* was a hypnotic that led to sleep, mescal buttons produced neither effect. Also, while *Cannabis indica* created merriment, they described the mescal buttons as producing “wonder and admiration, but no merriment.”¹⁹ Peyote was thus unlike the drugs then increasingly facing prohibitionist pressures: opium, marijuana, alcohol.

Interviewed by the *Sunday Herald* in Boston in the aftermath of the experiments, Prentiss reiterated his ambivalence. The drug produced vivid, colorful dreams and had few aftereffects, but he and his collaborators did not know how they might put it to use. “It promises to be valuable medicine, but its alkaloids and resinoids must be examined separately to ascertain which are the active principles.”²⁰ He doubted it could replace any drug then in circulation but offered that it “promises to become an important addition to the class of drugs known as nerve stimulants and tonics.” When confronted with the concern that the “white man might become addicted to its use as an intoxicant,” Prentiss equivocated. “The Indians are not addicted (no habit is formed) but we cannot say what will happen to Caucasians.”²¹

A few months later Mooney published a detailed account of the Kiowa peyote ceremony in the *Therapeutic Gazette*, in which he insisted that “so numerous and important are its medical applications, and so exhilarating and glorious its effect, according to the statements of the natives, that it is regarded as the vegetable incarnation of a deity.”²² As far as Mooney could tell, the Kiowa used it to great effect for fevers, headaches, chest pains, hemorrhages, and consumptive diseases. Its power in curing the latter had made it very popular among students returned from eastern boarding schools “who almost inevitably acquire consumption in the damp eastern climate.” They were “the staunchest defenders of the ceremony, having found by experience that the plant brings them relief.”²³ In order to drive this point home Mooney told the story of his Kiowa interpreter, Paul Setkopi, who spent four years in New York but was eventually sent home to die among his people after contracting consumption. He was given a few mescal buttons for his coughing when he arrived home and felt immediate relief. Thirteen years later he was still alive and had largely recovered.²⁴

Mooney also insisted in the article that the mescal buttons had no deleterious mental effect. To prove this point he invoked Quanah Parker (here called Zuanah), another figure he would return to over the years in his efforts to defend indigenous peyotism. Parker, he said, was the great high priest of the peyote rite among the Comanches and a

mixed-race chief of the tribe. “Any who know him at home or in Washington will admit that there is no more shrewd or capable business man in the Southwest.” During one ceremony Mooney had watched Parker consume thirty buttons. The next morning he was doing business with cattlemen, showing no effect. Others might eat as many as fifty buttons, with no ill effect. Their examples demonstrated that the buttons were a powerful stimulant that enabled those who consumed them to endure “great physical strains without injurious reaction.”

For his own part, Mooney reported that the first times he had observed a ceremony without taking any buttons he finished the evening numb, exhausted, and hardly able to stand. Since he had adopted the habit of taking three to four buttons, he had found that he could stand all night and come out in the morning feeling refreshed. He had never consumed more than seven and believed that were he to take more, the disagreeable taste “would probably cause me to vomit.” This was too few buttons to experience a “mental effect,” which his informants indicated only came after eating ten buttons (they typically ate twelve to twenty).²⁵

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Weir Mitchell was the last of the recipients of Mooney’s peyote to experiment with the buttons, waiting until after he read Prentiss and Morgan’s report in the *Therapeutic Gazette*. Wanting to concentrate the power of the buttons, he made an alcoholic extract, in which each drachm of alcohol represented one button. At noon on 24 May 1896, he drank one and a half drachms of the extract, followed by another drachm an hour later. His initial symptoms included a flushed face, a sense of exhilaration, and a tendency to talk, while his reflexes remained unimpaired. At two o’clock he ventured out for his consultations with his patients and noticed that he had much more endurance than usual, making a four-story climb two steps at a time without experiencing any shortness of breath. He commented that “this is akin to the experience, as I learn, of the mescal eating Indians, and to that of many white men.” At this point he noticed that colors were shifting, and after returning home and taking some more of the extract (to a total of six and a half drachms), he noticed that “a transparent, violet haze was about my pen point.” He began to feel especially confident in his abilities and experienced a number of visual hallucinations. Lying down, he saw bright lights, “such as I find it hopeless to describe in language which shall convey to others the beauty and splendor of what I saw.” The effect, he said, was in some ways similar to an ophthalmic megrim (migraine).²⁶

Splendorous as the visions were, the experience left him with an ominous feeling.

I predict a perilous reign of the mescal habit when this agent becomes attainable. The temptation to call again the enchanting magic of my experience will, I am sure, be too much for some men to resist after they have once set foot in this land of fairy colours where there seems to be so much to charm and so little to excite horror or disgust.

Published in the *British Medical Journal*, this deeply ambivalent account attracted the attention of Henry Havelock Ellis, who managed to buy some mescal buttons at Potter and Clarke, a London apothecary. As he reported in the *Lancet* in June 1897, in his first experiment he took three buttons at intervals of one hour each. The doses immediately caused a headache to disappear, followed by unusual energy and intellectual power, which also passed quickly. After that he experienced a variety of hallucinations, including kaleidoscopic colors, with no impairment of his intellectual judgment. The world around him glowed, had a polished quality, was fibrous, and everything he cast his sight on was in a constant state of change. Impeded motor coordination and cardiac and respiratory depression were the only unpleasant symptoms he suffered, though he was disturbed by the fact that during the experience his “body felt unfamiliar to the touch.”²⁷ Mescal buttons had produced an intoxication of the senses and nerves, overloading the brain with sensory experience, but the cognitive brain remained remarkably clear through the experience (unlike with hashish, marijuana, alcohol, and opium). “The mescal drinker remains calm and collected amid the sensory turmoil around him; his judgment is as clear as in the normal state; he falls into no oriental condition of vague and voluptuous reverie.”²⁸

Ellis did have some concern about the effect of the drug, as he recounted in the *Contemporary Review*. While his experience had been rather benign, in an artist friend peyote brought on “paroxysmal attacks of pain at the heart and a sense of imminent death.”²⁹ The sudden illumination of the world around terrified his artist friend, as it

seemed like a kind of madness beginning from inside me. . . . My speedy dissolution, I half imagined, was about to take place. . . . At another time my eye seemed to be turning into a vast drop of dirty water in which millions of minute creatures resembling tadpoles were in motion.³⁰

Shortly thereafter the friend’s right leg became “heavy and solid,” carrying the entire weight of his body. He reported that “the rest of my body had lost all substantiality.” After that “the back of my head

seemed to open and emit streams of bright colour; this was immediately followed by the feeling as of a draught blowing a gale through the hair of the same region.”³¹

Most terrifying was the fact that his mind remained lucid as the world around him dissolved. “Pressing my fingers accidentally against my temples, the fingertips became elongated, and then grew into the ribs of a vaulting or of a dome-shaped roof. . . . My arm separated from my body.” He described a biscuit passed to him erupting in blue flame. When he touched his trousers with the biscuit, they were set on fire. He then put the biscuit into his mouth, creating a fire inside his mouth. His skin then grew as thin as tissue paper.³² Describing this as an out-of-body experience, he said:

During the period of intoxication, the connection between the normal condition of my body and my intelligence had broken—my body had become in a manner a stranger to my reason—so that now on reasserting itself it seemed, with reference to my reason, which had remained perfectly sane and alert, for a moment sufficiently unfamiliar for me to become conscious of its individual and peculiar character. It was as if I had unexpectedly attained an objective knowledge of my own personality. I saw, as it were, my normal state of being with the eyes of a person who sees the street on coming out of the theatre in broad day.³³

Coupled with an account of William Butler Yeats fearing that his weak heart would give out under the effect of peyote, these stories did not exactly amount to a ringing endorsement of the new drug. Nonetheless, Ellis did not think it should be prohibited, and argued that others would be attracted to it for good reason. It was “the most purely intellectual” of the drugs, and for this reason posed little threat of abuse. What was more, “unlike the other chief substances to which it might be compared, mescal does not wholly carry us away from the actual world, or plunge us into oblivion; a large part of its charm lies in the halo of beauty it casts around the simplest and commonest things.”³⁴ He suspected it would become popular, believed it was very promising for those who “cultivate the vision-breeding drugs,” and was certain that it would be of great interest to psychologists and physiologists.³⁵

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Ellis wrote with a certainty that the drug acted on the body, producing a physiological effect. Peyote did not have the powers attributed to it by indigenous users and the colonial subjects who were drawn to the cactus. It did not allow users to see something that was normally hidden,

to speak with God, the devil, the ancestors. It instead distorted the body's capacity to sense itself and the world around it. Time did not change. The body did not fly. If the body became unfamiliar to the touch, or if the physical boundaries of the body in its normal state seemed to dissolve (the out-of-body experience, or depersonalization), it was because the drug had affected cognition, not because the drug had reshaped reality or enlarged the user's capacity to perceive the world. It was the trick performed by the drug, a trick that later scientists would use to classify peyote as a psychotomimetic—a drug that mimics psychosis. It was up to modern science to determine if this effect was significant enough to undertake a process in which they could transform peyote into a useful drug.

That task would not be easy. Reading Ellis's work as subjective, unscientific, and superficial, the editors of the *British Medical Journal* excoriated Ellis for his essay in the *Contemporary Review*. His mescal paradise would be better phrased as a new inferno, not so different from that caused by opium, and his "eulogy" to the drug represented "a danger to the public."³⁶ Aside from highlighting the terrifying visions experienced by his artist friend, and the fact that Yeats could have died because of his weak heart, they were particularly alarmed by Ellis's claim that a healthy person who takes it once or twice will have an "unforgettable delight" and an educational experience. Their response:

Surely this is putting temptation before that section of the public which is always in search of a new sensation; and this temptation to mescal drugging is enhanced when Mr. Ellis "explains" that the taking of this substance can never degenerate into a habit.

Noting that some people might even be killed by their first dose, they also disputed Ellis's claim that there was no danger of a "mescal mania." People might begin for intellectual reasons but could easily become addicted because of the pleasure it brings. As for the reports of Kiowa mescal ceremonies, they dismissed Kiowa rituals as "mescal orgies" and reminded their readers that these rites had been suppressed by the US government (this claim was only partly true). In a classic display of late nineteenth-century racism, they also derisively noted that "we have yet to learn that the Kiowa Indians are the most intellectual of the inhabitants of the sister Continent."³⁷

The journal's sarcastic, casual dismissal of the Kiowa relied on a commonplace but circular logic, in which Indians were degenerate because they were peyotists, or peyotists because they were degenerate

Indians. Perhaps the modern men of science and Christian morals could rescue them, but given the degeneracy-peyote cycle, it was unlikely. By extension this logic suggested that civilized folk had much more to lose should they fall prey to the drug, and that the differences between their bodies and indigenous bodies made them more vulnerable to the dangers of peyote. It did not really matter whether Indian bodies were different because of an essential distinction between whiteness and indigeneity or because of their peyote use. Their bodies were fundamentally, essentially different.³⁸