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FROGS

Sweet are the uses of adversity,
Which like the toad, ugly and venomous,
Wears yet a precious jewel in his head
SHARESPEARE

The suspect was "not your average maggot-looking dope dealer on the corner." At least that's what the police say. It was 1994, and he was arrested for possession of bufotenine, a Schedule 1 drug under the California Controlled Substances Act. The drug in question came in the form of four toads—Hanz, Franz, Peter, and Brian—that the suspect intended to smoke. Not the entire toad, but, as has been known to happen in fairy tales, its skin. More specifically, the parotid gland at the back of Hanz's head would be milked, dried, and smoked, causing our suspect to inform the police that he could "hear electrons jumping orbitals in his molecules."

California outlawed bufotenine in 1970, but the toad smoker was the first to be arrested and charged under this law, probably because of a curious bufotenine panic in the early 1990s. News of hippie Australian toad lickers hit the U.S. press with the Toronto News screeching "Licking Toad a Dangerous New Craze," the Guardian proclaiming "It's Repulsive and Highly Dangerous," and

I. Information about the couple's case comes from Modesto Bee, "Toads Bring a New Look to Drug Bust," January 6, 1994; Modesto Bee, "Delay in Toad Case," March 2, 1994; New York Times, "Couple Avoids Jail in Toad Extract Case," May 1, 1994.

the Los Angeles Times warning that "Licking a Toad Is the Latest Way to Hallucinate."2 A grave threat to America's future was at hand and state legislators took swift action. "They say these frogs grow to the size of a dinner plate," said Rep. Patrick Harris of South Carolina explaining his anti-bufotenine bill, "I don't want to see somebody walk across the Statehouse grounds with a frog on a leash and pick him up and lick him."3 Indeed. State representative Beverly Langford warned Georgia legislators of "the extreme dangers of toad licking becoming the designer drug of choice in today's sophisticated society" and asked the state to determine if toad licking should be classed as a sex crime.4 Both legislators were referring to the giant marine toad (Bufo marinus) whose natural range stretches from Texas through Mexico and Central America to the Amazon Basin of South America but was introduced in Florida, the Caribbean, Hawaii, the Philippines, and Australia. However, all of the more than two hundred species in the Bufo genus-including Europe's common toad (Bufo vulgaris) for which the compound was named-contain bufotenine. There isn't a pet shop in the United States and few ten-year-old boys that have not illegally possessed bufotenine.

The Wall Street Journal noted the arrest in a story bearing the headline "Toad-Smoking Gains on Toad-Licking among Drug Users," and indeed the arrest set off an unlikely war between adherents of licking and smoking. The latter asserted that bufotenine is unlikely to be psychoactive, and, if it is, the toxic effects, especially combined with the orally active bufotoxins and bufodienolides, would threaten the life and health of any would-be enthusi-

^{2.} The Guardian, "Getting Their Kicks and Licks on the Toad to Rack and Ruin," July 11, 1990; Toronto Star, "Licking Toads a Dangerous New Craze," January 21, 1990; Los Angeles Times, "Toad Licking Leaves More than a Bad Taste in the Mouth." January 31, 1990.

^{3.} Mitchell Landsberg, "Legislators Toady to Chickens, Marmots," Los Angeles Times, March II, 1990

^{4.} The Guardian, "Getting Their Kicks and Licks on the Toad to Rack and Ruin," July 11, 1990; Cox News Service, "His Story Has Warts in It," February 14, 1990.

ast long before a potential ecstatic state would set in. ⁵ They promote another compound, 5-methoxy-N,N-dimethyltryptamine (5-MEO-DMT) as a more compelling hallucinogen. 5-MEO-DMT is present in only the Sonoran Desert toad (*Bufo alvarius*), is active only if smoked, and the smoking eliminates other toxic compounds. Scientists believe 5-MEO-DMT is one of the most powerful hallucinogens found in nature and perhaps the only hallucinogen present in an animal. Hanz, Franz, Peter, and Brian were Sonoran Desert toads and clearly destined for the pipe.

The lickers point out that while the Sonoran Desert toad's range extends only from southeastern California to southwestern New Mexico and south to Sinaloa, archaeological artifacts, linguistic associations, and folk stories from around the world suggest a hallucinogenic use of toads and toadstools. Though the Sonoran Desert toad inspired the Arizona-based Church of the Toad of Light, and may have been traded by Native Americans into parts of Central and South America (though physical evidence is lacking), it cannot explain the consistent worldwide association of toads and transformative/psychedelic experiences, from Mayan burial rituals to the Temple at Delphi, Chinese ch'an su medicine, and European frog prince stories.

Scientific research, which has primarily been carried out on murderers, schizophrenics, and LSD-addicted rats, has not been terribly helpful. The rats showed some proclivity to press a button marked "LSD" when given bufotenine, but the results were not statistically significant. The murderers and schizophrenics, busy with nausea, retching, vomiting, nystagamus, and their skin's turning "the color of eggplant," pressed no LSD buttons. One nearly drowned in her own saliva, another had to be resuscitated. Nasty stuff, but they undoubtedly experienced hallucinogenic sights and

5. See T. Lyttle, D. Goldstein, and J. J. Gartz, "Bufo Toads and Bufotenine: Fact and Fiction Surrounding an Alleged Psychedelic," Journal of Psychoactive Drugs 28, no. 3 (1996): 267–90; Wade Davis and Andrew T. Weil, "Identity of a New World Psychoactive Toad," Ancient Mesoamerica 3 (1992): 51–59; and Davis, Shadows in the Sun.

visions. One subject confessed: "Words can't come. My mind feels crowded. When I start on a thought, another one comes along and clashes with it.... I am here and not here." Another recovered a suppressed memory from age three of seeing her mother dying of a uterine hemorrhage. More recently, self-experimenters have demonstrated hallucinogenic bufotenine effects in carefully controlled environments.6

Whether the California legislature was mistaken in outlawing bufotenine, our suspect was the first person prosecuted for toad frolicking since Maria de Illara in 1611.7 De Illara, a sixty-nine-year-old Basque woman, confessed that the devil had instructed her to pound up toads in water and rub the ointment upon her chest down to her navel and in her armpits to obtain the power of flight. Flying ointments were well known in Europe and typically included plants in the nightshade family, especially henbane, jimson weed, belladonna, and mandrake. They contain atropine and scopolamine (6,7-epoxytropine tropate), powerful but deadly hallucinogens. They often included mashed toad as well. Dosage is critical to survival and difficult to control orally, so the ointment was sometimes placed on the end of stick or the handle of a broom or pitchfork and then inserted into the vagina, giving rise to the image of witches flying on broomsticks.⁸

The first toad trial, which was also the first witch trial in England, took place in 1566.9 Elizabeth Francis received from her grandmother a toad that, through dark contrivance, had been

^{6.} See J. Ott, "Pharmanopo-psychonautics: Human Intranasal, Sublingual, Intrarectal, Pulmonary and oral Pharmacology of Bufotenine," Journal of Psychoactive Drugs 33, no. 3 (2001): 273-81; and Alexander T. Shulgin and Ann Shulgin, Tibkal: The Continuation (Berkeley, Calif.: Transform Press, 1997).

Adrian Morgan, Toads and Toadstools: The Natural History, Folklore, and Cultural Oddities of a Strange Association (Berkeley, Calif.: Celestial Arts, 1995).

^{8.} Ibid.; Andrew Sherratt, "Flying up with the Souls of the Dead," British Archaeology 15, June 1996.

Willyam Powell, "The examination and confession of certaine Wytches at Chensforde in the Countie of Essex before the Quenes majesties Judges, the XXVI daye of July Anno 1566," in Marion Gibson, Early Modern Witches: Witcheroft Cases in Contemporary Writing (London: Routledge, 2000).

transformed into a cat named Sathan. It could be compelled "by pricking her hand or face and putting the blood in his mouth which he sucked." Applying toad secretions to a wound was and is a method of bufotenine ingestion.

With a blood offering/cat-bufotenine ingestion, Elizabeth bade Sathan to bewitch a certain Andrew Byles. Sathan agreed but stipulated that Byles should "abuse" her before marriage. The deal was struck, the abuse rendered, but Byles refused to marry. Sathan killed him, then counseled Elizabeth on the use of an herbal abortive, probably ergot, another dangerous hallucinogen. Compelled again, Sathan bewitched Christopher Francis to marriage. It didn't end well. The official record tells us that the couple "lived not so quietly as she desyred, beinge stirred to much unquietnes and moved to swearing and cursinge." At Elizabeth's bidding, Sathan killed their infant daughter, turned himself into a toad, and hid in Christopher's shoe. Upon touching the not-so-hapless toad with his toe, Christopher became incurably lame.

Elizabeth traded Sathan to Agnes Waterhouse for a sweet cake. Mother Waterhouse was, unfortunately, prone to neighborly quarrels and in short time bade Sathan to drown one neighbor's cow and another's geese. Hogs were similarly dispatched and butter curds made to be lost. She was generous to Sathan, however, for in each instance he was given not only a drop of blood but a whole chicken that "he ate up clean . . . and she could find remaining neither bones nor feathers."

Confessing to two murders and a hobbling, Elizabeth Francis was sentenced to two years in jail. Agnes Waterhouse denied being a witch but admitted to conspiring with Sathan against live-

^{10.} Morgan, Toads and Toadstools.

II. Five years after being released from prison, Elizabeth Francis was again found guilty of witchcraft. Though England had a two-strikes-you're-out witchcraft policy, she was mysteriously sentenced to only a year in jail. Six years after she was released, she stood trial for witchcraft yet again and this time was sentenced to death. See "A Detection of damnable driftes, practized by three Witches arraigned at Chelmisforde in Essex, at the laste Assises there holden, which were executed in Aprill 1579" in Gibson, Early Modern Witches.

stock and curds. She was hanged by the neck on July 29, 1566. Though it was not unheard of for medieval Europeans to put animals on trial, this was not Sathan's fate. Upon hearing the Lord's Prayer in Latin, he reverted to a toad and hopped away.

Bewitching, toads, and marriage continue to intersect in modern tellings of the "Frog Prince" and some versions of "Beauty and the Beast." The stories play out very differently in the United States and Europe. Although I don't disagree that an excessive and narrow morality has simplified and sanitized the American versions, 12 it's worth noting that this critique has largely been developed from an anthropocentric perspective that deprives the frog of biological properties and the ability to actively participate in the human drama. The frog is reduced to a symbol. Such thoroughgoing and naive humanism would have been inconceivable to the early tellers of these tales. A pharmacological—or better, ecological—perspective adds depth to the stories and their evolution.

A petulant princess drops a golden ball down a well. A frog offers to retrieve it but only if the princess promises to let him be her companion, to dine at her table, to sleep in her bed. She falsely agrees, takes the ball, and runs back to her castle, leaving the frog behind. The frog eventually makes his way to the castle, where the king forces the disgusted princess to keep her promise. In a German version she grabs the frog as it tries to enter her bed and smashes him against the wall screaming, "Now you'll get your rest, you disgusting frog!" The violent act breaks an evil spell unknown to the princess, transforming the frog into his original form, a handsome prince. In a British version she beheads the frog. In a Polish version the frog is replaced by a snake, which is cut in two. A Lithuanian version has her burn the snake's skin. A Russian "Beauty and the Beast" story reverses the genders and has the

^{12.} See E. W. Harries, "The Violence of the Lambs," Marvels & Tales: Journal of Fairy-Tale Studies 19, no. 1 (2005): 54-66, and Don Haase, "German Fairy Tales and America's Cultural Wars: From Grimm's Kinder-und Hausmarchen to William Bennett's Book of Virtues," German Politics and Society 13 (Fall 1995): 17-25.

prince burn the female toad's skin. In American versions the princess places him on her pillow or compassionately kisses him.

So we're back to lickers versus smokers (and perhaps cutters). In either case, while the stories have irreducible gender, father-daughter, and marriage themes, they also have an irreducible ecological theme. Animals become human and humans become animal. The transformation/insight is not accomplished by word magic but by kissing, licking, smoking, ingesting, and even appreciating the other. Bufotenine, like other powerful compounds, can cross the species boundary because it is an analog to human serotonin. It and the human brain are structured and biologically destined to interact.

But the possibility of interacting is becoming increasingly remote, even impossible. The Sonoran Desert toad is an endangered species in California. It's been extirpated from the state since the 1970s. Toad smoker got his from Arizona. The human experience of the species has gone extinct for most Californians. Tuolumne County, where the arrest occurred, is home to the California redlegged frog, made famous by Mark Twain as the Celebrated Frog of Calaveras County. Once abundant enough to support eighty thousand diners a year in San Francisco, it was placed on the federal endangered species list in 1996. There will be no more licking or eating, and very little seeing or hearing, of the California redlegged frog. It was long ago replaced at jumping frog contests by exotic bullfrogs. A third Calaveras resident, the foothill yellowlegged frog, is in the process of being placed on the endangered list.

"Beauty and the Beast" stories changed dramatically in the twentieth century, focusing less on the beauty's redeeming and civilizing of the beast and more on the beast's animal dignity and struggle to survive.¹³ This should come as no surprise. Fairy tales

^{13.} Marina Warner, "Go Be a Beast: Beauty and the Beast II," in From the Beast to the Blonde: On Fairy Tales and Their Tellers (New York: Farrar, Straus and Giroux, 1994). In Jon Scieszka's The Frog Prince Continued, the unhappily married couple kisses again and both people happily turn into frogs.

evolve to communicate the existential situation of the communities that tell them. That situation is less a matter of received values and beliefs than it is an engagement with the real. In our world, where the plant and animal foundations of our symbols and metaphors are increasingly threatened with extinction and the assumptions of humanism appear increasingly barren, fairy tales cannot but reexamine the human-animal relation.