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## Time in a Bottle

Dr. Patrick McGovern helps ancient drinks bubble back to life.

n a frosty February morning, the sky sidewalk-gray and my breath clouding at each exhalation, I entered Philadelphia's Penn Museum. Founded in 1887, the institution is an anthropological and archaeological wonderland, its roughly 1-million-artifact collection encompassing mummies and Mayan figurines, bronze Etruscan shields and Roman water flasks.

Drinking relics are particular pillars of the collection. Egyptian beer vessels share storage with Iranian wine jars from 5,000 B.C. and containers for Peruvian *chicha*, a type of corn beer starring saliva. The museum is testament to alcohol's millennia-old hold over humanity and proof that our ancestors liked to loosen their inhibitions just like Jeff from accounting does during happy hour.

I'd traveled to the Penn Museum to better understand ethanol's importance to civilizations past and present, which meant knocking on Dr. Patrick E. McGovern's office door. Dr. Pat, as he's known, is the scientific director of the University Museum's of Pennsylvania biomolecular archaeology project. He employs sophisticated technology like infrared spectrometry to decode chemical signatures of drinking residue found in, say, vessels from King Midas' tomb or a 9,000-yearold Chinese village. He's not satisfied with simply publishing his findings in a journal; instead, he wants to have his research and drink it, too. Armed with ingredient sketches from his research, he enlists Dogfish Head founder and CEO Sam Calagione-who happily lobs honey, tree resin and hawthorn berries alike into brew kettles-to make mankind's boozy antiquities bubble to life. "He's your quintessential, erudite, tweed jacketwearing bearded professor, but he's also fun to drink beer with," Calagione says.

Dr. McGovern greets me with a ruddy grin and green vest. He's wearing professorial wire-rim glasses, a full gray mane—I want to look as good as he does at 72—broken-in loafers and a bushy beard suited for stroking while grad students seek counsel. On his wall hangs a cartoon of the academic and Calagione emerging from a *Back to the Future*-style DeLorean.

"Want a cup of coffee?" McGovern asks. By the door, I spy a spread of mugs, a Chock full o'Nuts tin and coffee machine, the pot partly full. I do. It's been a long morning. He pours a mug. The coffee is a little cold, he notes, zapping it in a microwave. Drinking an ancient beverage revived by modern science seems like a fitting start to talking with McGovern, who just returned from an Arizona birding trip with his wife, Doris. He's slightly under the weather, forging through to discuss his latest book, Ancient Brews: Rediscovered and Re-created (W.W. Norton & Company), releasing in June. The tome takes readers on a ride of archaeological and scientific discovery, recounting the stories behind his iconic Dogfish Head collaborations offering recipes for homebrews and and complementary meals. Each page chisels away our bedrock understanding of alcohol.

Story by Joshua M. Bernstein Photo by Felicia Perretti



## Patrick McGovern continued

Ferments like mead, beer and wine weren't always distinct beverages, he explains. Early inebriants were a mélange of local agriculture, a mess of fermentable sugars. Got a sackful of grains, honey, grapes, spices and herbs? Great! You've got yourself a mood-enhancer. "There really was a mixed beverage that was worldwide," he says. "Just about any ancient beverage was not a specialized wine or beer."

Alcoholic beverages were also unbridled by geography. "They were central to just about every culture that's ever been, both religiously and as social lubricators," McGovern says. Moreover, the lack of modern drugs meant alcohol played an even more vital role. "You didn't have medicine, so alcohol was your primary medicine, along with herbs," he says, noting that many hoary pharmacopoeias consisted of herb-infused booze. "Alcoholic beverages of all kinds are the universal medicine. That's not always pointed out."

Booze was also the carrot stuck on a stick, an energy booster during backbreaking labor. "We probably wouldn't have the monuments we have, the pyramids of Egypt and Mexico, if we didn't have lots of rations of beer," he says. "Egyptian workers got, like, five liters of beer a day. Of course they got bread, too. The brewery and bakery were next to each other in the pyramid village."

So which came first, bread or beer?

"Beer came first," McGovern says unequivocally. "It's easier to make. You see some grains sprout outside your primitive dwelling and notice it's sweeter. Then you have some liquid gruel that starts fermenting." We've come a ways from the days of fermented gruel. Brewers today have access to a global pantry, and creating a recipe means messing with four variables: hops, water, yeast and grain. Even reviving so-called ancient beers like Germany's acidic Berliner weisse is possible (and popular!), as written records give brewers fat historical breadcrumbs. A brewer digging up shallow beer graves is simple. Breathing life into unclassifiable beverages that evaporated into the historical ether is a far different, and more difficult, feat.

McGovern was first introduced to beer as a 16-year-old biking through the Bavarian Alps. "It was cheaper than Coca-Cola," he says. In a big-screen biopic, this Teutonic vignette would've drawn a direct line to ancient inebriants. Reality is far more jagged. McGovern took a position at the Penn Museum before graduating from the University of Pennsylvania with a PhD in Near Eastern studies (and several minors, including Hebrew). Archaeology became a passion, and in more rudimentary times, uncovering proof of previous civilizations merited a million hosannas. Technological advancements enabled archaeologists to unearth the microscopic life lurking inside the inert.

McGovern pioneered the field of biomolecular archaeology. His first breakthrough was Phoenician amphora sherds. The fragments were vividly purple, and examination revealed the color's origins as *dibromoindigo*, a dye laboriously harvested from mollusks. The precious and pricey colorant was reserved for royalty, creating its nickname: royal purple. "That showed us we had preservation of dibromoindigo for thousands of years," he says of his aha moment. "And it was an organic compound."



## HOLLAND'S ORIGINAL TRAPPIST ALE

McGovern's research gravitated toward wine and, in time, the Penn Museum's prized drinking vessels from King Midas' tomb. They were stored several flights above his head, the easiest archaeological dig he ever did. "They were still in the original paper bags," he says. "We had such a mass of material from a good context, and we decided to do all the latest techniques."

Let's sit in on a night in spring 2000. On a Friday night after a celebration in honor of beer sage Michael Jackson, McGovern stood up before a brewer-heavy group and announced his findings, inviting everyone to his lab *early* Saturday morning to learn more. Some 20 showed up, returning to their breweries to make renditions of an elixir starring grapes, honey mead and most likely saffron. Samples arrived at his doorstep, the winner Dogfish Head. The revival was served at the Penn Museum's interpretation of King Midas' lamb-loaded funereal feast. "We thought we would just do it once, because it was so damn expensive," Calagione recalls.

But people loved the re-creation so much that Dogfish Head—assisted by McGovern's small loan—bottled Midas Touch, which has since won boatloads of awards. A partnership was cemented. "He has awesome global access to archaeological and scientific discoveries," Calagione says of their historical enterprise.

The duo regularly collaborate on Ancient Ales, as the series is known. Revived elixirs include chocolaty Theobroma, traced to Honduran pottery fragments. Birra Etrusca Bronze stemmed from drinking vessels uncovered in 2,800-year-old Etruscan tombs, the bitterness supplied not by hops but rather by gentian root and sarsaparillalike myrrh resin. Scandinavia yielded a 3,500-year-old birch bark container, and careful analysis led to Kvasir lingonberries and cranberries provide a tart pop.

Za'atar-spiced Ta Henket, prompted by Egyptian hieroglyphics, proved a bit of a commercial bust. "The average American palate was a little put off by that one, so they had to discontinue it," McGovern says of the beer, its creation chronicled on the *Brew Masters* TV show. "We were maybe a little too far ahead of our time."

"Even if they weren't the most delicious to drink, they had the coolest stories," says Publican beer director Adam Vavrick. "The bigger takeaway is that the beers opened the doors for breweries to mess around with things like ancient grains."

In a certain respect, Dr. McGovern and Dogfish Head are pressing reset on brewing traditions. "These are liquid time capsules, and we're using them to bring today's craftbeer drinkers back to a world pre-*Reinheitsgebot*, where every culture didn't have the Internet," Calagione says. "You defined beer by what's beautiful, natural and grows under the ground I live on, and I feel like making and drinking beer makes us humans feel closer to our gods and ancestors."

Given his vast body of work, it'd be understandable if Dr. McGovern slowed his pace, perhaps played a few more rounds of his favored golf. But research continues apace. He's working with Germany's Weihenstephan on a millennia-old wheat beer, and he's noodling on another Dogfish Head Ancient Ale—top-secret until his research is published. For McGovern, work and pleasure are as interlinked as the human race and alcohol. "I'm mainly excited about studying ancient beverages and drinking modern ones," he says. Since 1884, the monks of La Trappe have brewed their Trappist Ales with care and a strong sense of place and community. La Trappe is meant to be enjoyed as it is made—*thoughtfully*.

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