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## BREWING THE PAST

A Penn archaeologist recreates  
King Midas' beer

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# DRINKING ON THE JOB



Photo courtesy of Juzhong Zhang and Zhiqing Zhang, Institute of Cultural Relics and Archaeology of Henan Province, Zhengzhou, China

How a Penn prof and a homegrown brewer brought the world's oldest beer back to life

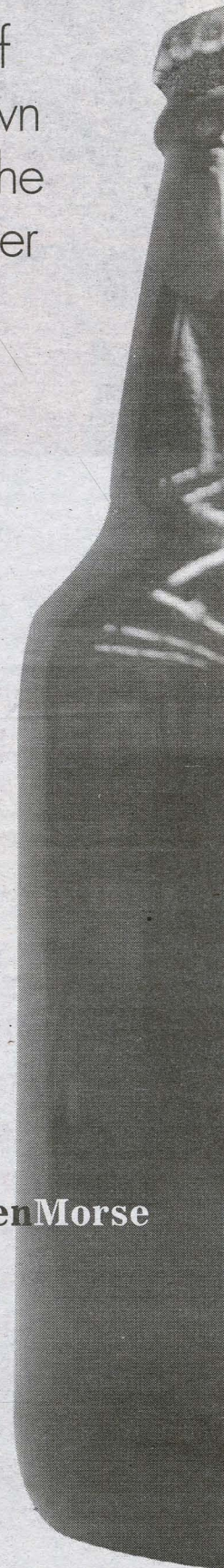
In 1950, a team of archeologists from the University of Pennsylvania Museum embarked on an expedition to Gordion in the ancient kingdom of Phrygia in central Turkey.

Seven years later, they discovered the tomb of the mythical hero King Midas, known for his golden touch, or what recent redating of the tomb points to as the body of Midas' father or grandfather.

Deep inside the "Midas" tomb were 157 drinking vessels containing remnants of an ancient beverage, said to have been drunk at Midas' funeral feast. It turned out they were the remains of a 2,700 year-old alcoholic drink that combined barley beer, honey mead and grape wine.

When the excavation was complete, these remnants, among other artifacts, were brought to the University of Pennsylvania Museum of Archeology and Anthropology where they lay in storage.

Decades later, an archaeologist would dig up the remnants again, this time from the University Museum. Now, a beer with the same chemical make-up is available at bars around Philadelphia...



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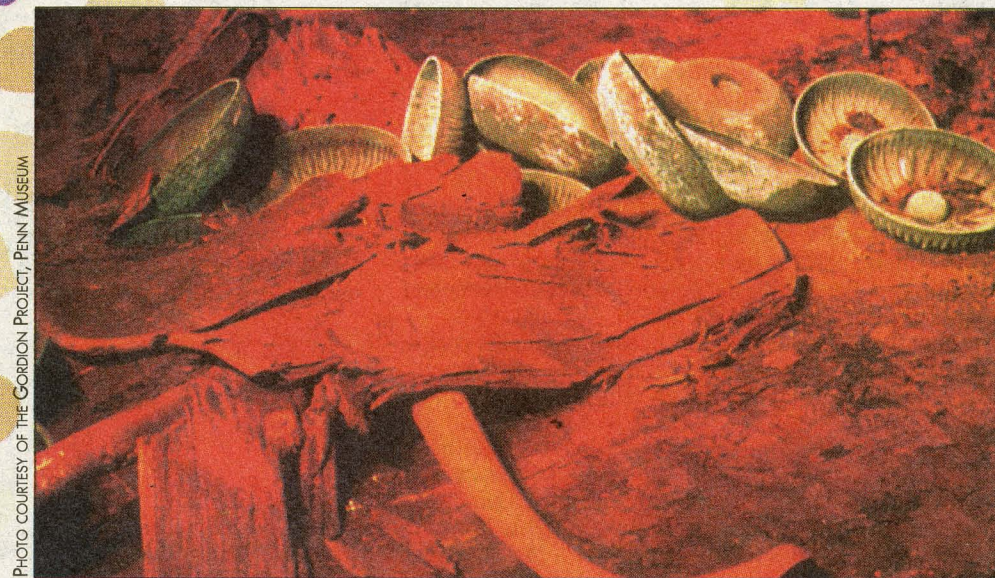


PHOTO COURTESY OF THE GORDON PROJECT, PENN MUSEUM

### Archaeologist and Adjunct Professor

of anthropology and senior research scientist Patrick McGovern has devoted the last 15 years of his life to wine and beer.

For several decades, the residues from the Gordion expedition were deemed insignificant and sat two levels above him in a brown paper bag in the University Museum's registrar office collecting dust.

But at the request of Dr. Elizabeth Simpson of Bard College, he began to take a closer look.

"We had to basically carry out a chemical-archaeological detective hunt," McGovern said.

McGovern, whose amiable personality and flowing white beard evoke images of *Harry Potter's* Dumbledore, soon identified the matter as the remnants of the ancient beer.

He decided that he should try to recreate this drink to see if the mixture from antiquity would be pleasing to taste buds thousands of years later. Within a couple of years, the beer would soon be commercially produced.

As classical music plays in the background of McGovern's office in the Museum Science Center for Archaeology, the beverage archaeologist explains that for thousands of years, fermented beverages have been vital for human survival.

Not only do such drinks have nutritional and preservative value, but throughout history, water hadn't been potable because of bacterial organisms.

Fifty years ago, there wasn't adequate technology to examine the chemical makeup of the residues that were discovered in Turkey.

However, in 1999, McGovern deduced from residue analyses that the beverage served at Midas' funeral feast was a hybrid beer-wine that intoxicated those mourning the death of their beloved leader.

Throughout history, alcoholic beverages have been the principal medicine of humanity. Though early humans didn't understand oxidation and other scientific principles, the fact that alcohol had a mind-altering effect convinced many groups that there was an outside spirit who provided them with their good health through this fermentation process.

This wasn't the first time that Penn scientists thought to collaborate with brewers to recreate fine prehistoric jungle juice.

In 1993, Penn Anthropology Professor Sol Katz worked with San Francisco microbrewery Anchor Steam to recreate a brew from ancient Sumeria. However, this brew never made it out of the tasting rooms into commercial production.

Each year since 1990, the University of Pennsylvania Museum of Archaeology and Anthropology has hosted an annual beer tasting featuring world-renowned British "Beerologist" Michael Jackson. Jackson authored the *World Guide to Beer* in 1977 and hosted public television's *Beer Hunter* series across the Atlantic.

Microbrewers from around the country gathered at the event and became the first non-academics to learn of McGovern's discoveries.

At a meeting of the beer-minds in his office, McGovern explained the chemical makeup of the drink he hoped to recreate. He initiated a contest between the microbreweries in hopes of bringing the findings of the Midas tomb back to life.

Within weeks, McGovern began to receive bottles of beer from brewers all over the country.

One of the microbrewers who sent alcoholic care packages to McGovern was Sam Calagione, who founded Delaware's Dogfish Brewery three years earlier.

"I was an obsessive homebrewer, and I wanted to find a way to allow my hobby to grow out of control into a lifestyle," Calagione said of how his homebrewery went commercial.

McGovern immediately became interested in collaborating with Calagione. During a road trip through Delaware, McGovern stopped at a pub in Centreville called Buckley's Tavern that featured Calagione's Shelter Pale Ale. For McGovern, the brew was love at first sip.

When Dogfish opened, it was the smallest commercial brewery in the country and Delaware's first brewpub.

Their first batch, Shelter Pale Ale, was brewed on a system of three small kegs with propane burners underneath.

Today, they brew over 2,400 cases of beer a day in a 100,000 square foot facility.

"I saw the American craft beer renaissance beginning to take shape, and I wanted to be a part of it," said 36-year-old Calagione, who has a Masters in Fine Arts in Creative Writing from Columbia University. He published a book called *Brewing Up a Business* in 2000 that explains the connection between his entrepreneurial goals and his passion for beer. He is currently working on a second book that will provide advice for homebrewers.

When he's not enjoying a few of his own Dogfish 60 Minute IPAs, he kicks back Sierra Nevada ales.

But in the mind of McGovern, the recreation of the "Midas" beverage by the ambitious young brewer was surely the finest of the batch.

In 1999, Dogfish also created a dessert beer or "braggot" that contained a high content of honey, plums and barley. The concoction accompanied the dessert at the Penn Museum's annual beer tasting the night before the brewers met in McGovern's lab.

Once the plums were changed to grapes, the first Midas recipe was born. However, a bittering agent was still needed to offset the high sugar content from the honey and the grapes, plus hops only date back some 800 years.

Whereas other brewers failed to find that perfect ingredient, Calagione's use of saffron to fill this void did the trick. Saffron was in keeping with the intensely yellow color of the original residue

**This year's 16th Annual Beer Tasting with Michael Jackson: Great Grains, Great Beers will be held at the Penn Archaeology and Anthropology Museum at 3260 South St. on March 18 at 1 p.m., 3:30 p.m. and 6 p.m. The tasting will feature the a recreation of an ancient Chinese fermented rice beverage, discovered by Museum researcher Dr. Patrick McGovern and under market development by Sam Calagione of Dogfish Head Brewery.**

**The event will also feature beers from around the world and food from the Museum Catering Company. Guests must be at least 21 years old.**

**Dogfish Head Craft Brewery tours are available on Mondays and Fridays at 3:00 p.m. at Dogfish Head Craft Brewery in Milton, Delaware Dogfish Head Craft Brewery 6 Cannery Village Center Milton, DE 19968 302-684-1000 or 1-888-8 Dogfish Head**

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that McGovern found. And with these final touches, the Midas Touch Golden Elixir was complete.

The final aromatic brew were barley malt, white Muscat grapes, honey and saffron.

In 2000, the drink was served at a re-creation of King Midas' funerary feast at the Penn Museum's 50-year commemoration of the dig in Turkey where the beer's residues were first found.

"The people who came to the recreation of the dinner... were saying, 'This is a really fantastic beverage, wouldn't it be great if you could produce some more of it?'" McGovern said.

And with that, McGovern and Calagione worked out a deal to begin commercially producing King Midas' beer.

Now, Midas Touch can be found everywhere from the café at the Penn Museum to the refrigerators of Monk's Café downtown to the warehouses of distributors all over Philadelphia.

First served in wine-sized bottles, the beer with an unusually high nine-percent alcohol content (intentionally brewed to be midway between a standard beer and wine) has a taste and aroma profile similar to that of wine. Complete with a cork, real beer drinkers weren't initially interested in a product that was disguised as vino.

When Dogfish decided to downsize to the familiar 12-ounce bottle, sales of the Elixir began to take off. Appropriately enough, given Midas' golden touch, the beverage has won four gold awards and a silver in the past two years from the World Beer Cup and Great American Beer Festival.

The beer also inspired an episode of *Modern Marvels* on the History Channel, which first aired on Nov. 16, 2005 and has aired several times since.

History Channel writer and producer Anthony Lacques was the man behind the episode.

"I was continually impressed by the great care and seriousness with which human beings have brewed and fermented beer, from the ancient Sumerians and Egyptians, through the medieval monks and witches, to today's mega- and microbreweries," Lacques said. "The many scientific and technological breakthroughs in brewing are matched only by human beings' undying love for this beverage."

Lacques was interested in the possibility that people were first drawn to domestic grains for beer, more so than for bread. Either way, Lacques is fascinated by civilizations' captivation with beer throughout history.

"To me, the ancient Sumerian odes to beer sound a lot like a 21st century beer connoisseur waxing poetic about a newly discovered Scottish ale," he said.

With the increased publicity, local bars have begun to pick up the drink.

Monk's Owner Tom Peters said he carries the brand nine months out of the year.

"Sam Calagione is the only brewer in America who can put together such an odd combination of ingredients and make it taste delicious," Peters said.

Students have also caught on to the beer. Wharton junior Jonathan Levy first heard of Midas Touch from the History Channel feature while at his New Orleans home.

"I decided that when I returned to Philly, I needed to find this beer and check it out," Levy said.

The molecular archeological experiments have continued with residues from Jiahu, an early Neolithic village in Henan province in China, where some of the earliest domesticated rice was excavated.

For this next brew, 9,000-year-old materials taken from some of

the earliest pottery in the world are the basis for recreating another mixed beverage of rice, grape or hawthorn fruit and honey.

"I haven't tried the rice brew yet, but if anyone can make it work, it's Sam," Peters said.

The unlikely partnership between Penn and the world of beer has gone further than one would ordinarily expect. McGovern recently began a collaborative research project with the new laboratory of the Tax and Trade Bureau, an offshoot of the Bureau of Alcohol, Tobacco and Firearms.

As of now, hawthorn — an ingredient in their Dogfish's recipe — is legal in the United States as a food and dietary supplement, but it has never been used in beverages other than tea. That's about to change.

"The government has been very reasonable in all of their dealings with us so far. Showing the world that beer as old is as civilization itself is the best part of the project," Caligione said.

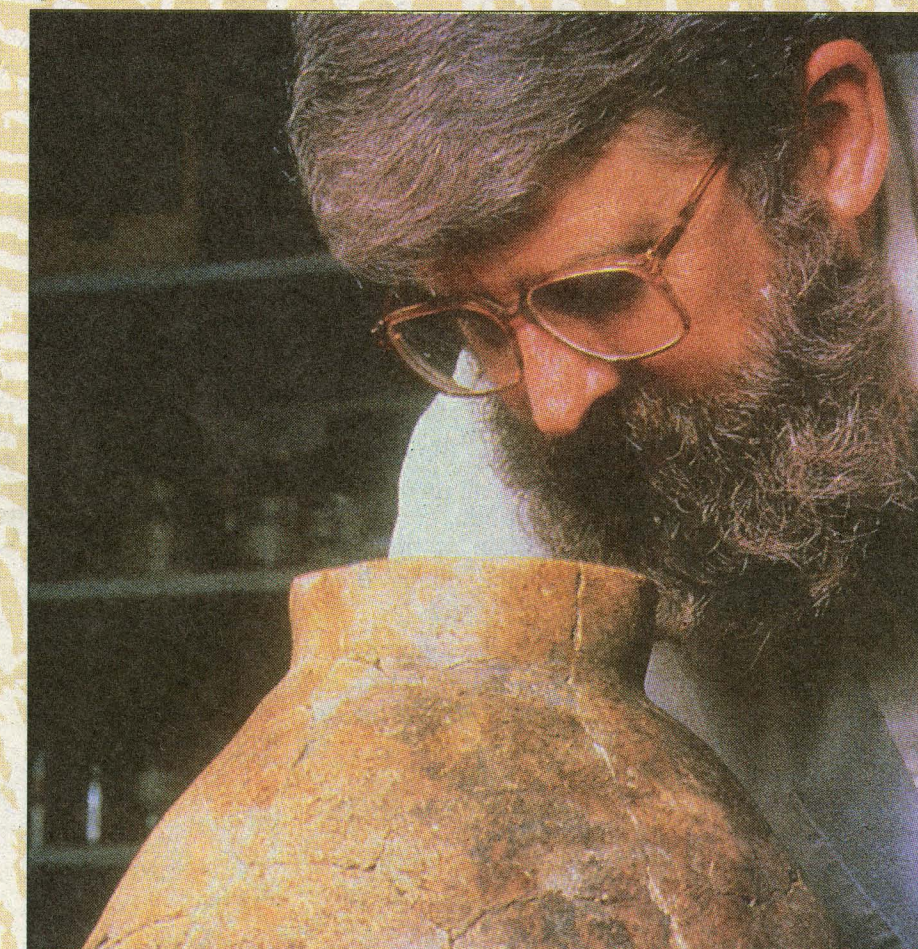
The future for Dogfish is looking bright. Dogfish is the only American brewery out of 1,400 listed in this year's Inc. 500, a list of the fastest growing private companies in America.

Calagione hopes that down the road his company will create more off-centered beers with the hope that "other enthusiasts will want to join us on our journey."

Another new project on tap is the production of an African honey beer called Tej made with tree roots from the Gesho Tree. This drink has been made for centuries in Ethiopia and is still popular there today. However, it was an instant success and is already completely sold out for the year.

Calagione says of McGovern, "He is not only a comrade and good friend, but someone who shares a passion for great beer. He has helped the world gain perspective about the importance of brewing in many cultures."

We'll drink to that. ■



Dr. Patrick McGovern at work

PHOTO COURTESY OF PATRICK MCGOVERN