



The Barleycorn Press

Monthly Newsletter Published by the Green Mountain Mashers of Vermont

January 2005

Volume 16 Issue 1



Good Beer is Born in the Rocks (and that doesn't mean ice)

by Kenneth Chang

The New York Times - Thursday, December 16, 2004

DENVER - The refreshing bitterness of an English pale ale, the clean light taste of a pilsner, the dark, almost burnt graininess of Irish stout. To Alex Maltman, these are prime illustrations of the power of geology. Wine connoisseurs talk of terroir - expressing the notion that vineyard soils impart discernible flavors in the finished wines. But data to back up the notion is sketchy at best, said Maltman, a professor of earth sciences at the University of Wales. And although whiskey distillers often make much of the water they use, there is also little correlation between the taste of whiskey and the geology of where it is made, he said.

Beer and geology, on the other hand, are closely entwined, Maltman said last month at a seminar on geology and beer

held at a meeting of the Geological Society of America. For one, geologists drink lots of beer, typically ending a long day examining rocks with a trip to the nearest bar. Mayor John Hickenlooper of Denver, a former geologist turned pub owner, told the geologists how a geology meeting in 1988 bolstered his fledgling microbrewery.

And as Maltman got up to talk, two-thirds of the audience also got up and headed for the lobby, where Denver microbreweries were handing out samples in small cups. "I'd like to suggest this evening, to the people who remain, that in fact it is with beer that there is the most direct link between the drink and geology," Maltman said.

Beer is more than 90 percent water, and because almost all brewers use water

from wells, not rivers or lakes, the different styles of beer were traditionally derived from the rocks that the breweries sat upon.

Beer is usually thought of as an unchanging product. But much scientific research and technological effort have been put into achieving that consistency from agricultural ingredients that change from year to year and season to season.

"There's a lot of science going on about beer," said Charles Bamforth, a professor of brewing science at the University of California at Davis. "The scientific understanding of beer is better understood than that of wine. It has been studied for many, many years in considerable details in a number of locations around the world."

Beer of various varieties has been drunk for thousands of years. The Epic of Gilgamesh, a king from the third millennium B.C. who ruled a land that is part of modern Iraq, mentions beer.

In the New World, archaeologists reported finding a hall in the Andes of Peru this summer with 20 brewing vats more than 1,000 years old. The brewery could be the oldest known tangible remnant of "large-scale state-sponsored institutional brewing," said Patrick Ryan Williams, an assistant curator at the Field Museum in Chicago.

When commercial beer making started in the 19th century in Europe, brewmasters came across a problem similar those experienced by the Andean brewers - the beer spoiled easily. Yet there were places that were exceptions. Burton-on-Trent in England was one, a

small town that had more than 30 breweries, producing the beer called pale ale or English bitter.

"Let's not forget at this time beer was not pasteurized," Maltman said. "Burton beer, somehow, did travel well. The supposition was that it was the water, but it was some decades before it was demonstrated what was going on." Burton-on-Trent sits on sandstone rich in minerals like gypsum from water that had percolated through the rocks long ago. The waters had a pH of 5 to 5.5, ideal for extracting sugars from malted barley steeped in warm water, an important step known as mashing.

"This is why the Burton waters were so good for brewing," Maltman said. "It turned out they had a very high mineral content, but just in the right balance to

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**NEXT MEETING
at Anne and
Matt Whyte's
Monday Jan 10th**

The next meeting of the Green Mountain Mashers will take place on Monday, January 10th at the home of Anne and Matt Whyte.

A few local commercial brewers will be at the meeting for a Q&A session and the upcoming Trub Trek to Southern VT/North Central MA will be discussed.

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get the right acidity for good leeching, good mashing. The balance of fermentable sugars has everything to do with the flavors and the kind of beer that results. The mashing stage is crucial."

The water was also rich in sulfates, which acted as a preservative, allowing the beer to be shipped to distant locations, even India - so the Burton beers were called India pale ales. Today, any brewer anywhere can produce India pale ales by adding minerals to, or "burtonizing," the water to match what burbles in Burton-on-Trent naturally.

A new style of beer called lagers developed in continental Europe. While ales are brewed at room temperature, the lager is fermented at chilled temperatures. (A different strain of yeast is used, too.)

Directions:

From Burlington take route 15 into Essex Jct. The last right before 5 Corners is School St. Take that right and it is on the right, #10. It's the 2nd house and the porch light will be on.

From Williston: Driving into Essex Jct. on Route 2A you will take a left onto Park Terrace, the road between Ming's Chinese Rest. and The Chittenden Bank. As you drive up Park Terrace you are looking at our house at the top of the hill. Park anywhere on the right side of School Street.

If you have any questions, call Vermont Homebrew Supply at 655-2070 or Anne and Matt at home (879-6462).



Pilsen, in the Czech Republic, became a noted practitioner of lagers, and geology again had a central role in defining the taste. The well water of Pilsen is drawn from a formation of metamorphic rocks, transformed underground by high pressure and heat so that they are almost impermeable. The water slides through cracks, but it draws almost no minerals from the rocks. This mineral-light water enhanced the clean, light taste of the beer, which became known as pilsner.

Munich, however, does not have ideal water for beer making. It is too alkaline, drawn from aquifers that lie in calcium-carbonate-rich sand and gravel washed down from the Alps. Furthermore, German law has long forbidden brewers to tweak the water chemically. "So they're a bit stuck," Maltman said. "Instead the

(Continued on page 3)

**Staff
Box**



The Barleycorn Press is a monthly publication of the Green Mountain Mashers Homebrew Club. The Barleycorn Press appears in the final week of each month. **Contributions are due by the 25th of the month of publication or two Thursdays prior to the next meeting (which ever comes first).** Please send contributions via e-mail (preferable) or send on a 3.5" IBM compatible diskette (hard copy as a last resort) to:

Tim Cropley
235 East Main St., Richmond, VT 05477
(802)434-7293 (hm)
t_cropley@yahoo.com

Contributions on any subject even remotely associated with the brewing and/or enjoyment of beer and related beverages are happily accepted by the editors. The editors reserve the right to edit any contribution as a function of available space, while making every attempt to maintain its integrity. The views expressed by contributors to the Barleycorn Press are not necessarily those of the editors or of the Green Mountain Mashers Homebrew Club.

This publication is made available free of charge to all dues paying members of the Green Mountain Mashers. Subscriptions are available to all other interested parties at \$7.00 yearly (US funds).

Note: The yearly dues of \$10 should be paid by the end of January. Please mail your check or money order made out to the "Green Mountain Mashers" to Treasurer Anne Whyte at the following address:

Anne Whyte
10 School St.
Essex Jct., VT 05452
(802) 879-6462 (hm)
(802) 655-2070 (wk)
vtbrew@together.net

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View the Official Web Page of the Green Mountain Mashers at:

<http://www.mashers.org>

Officers not listed above:
President - Bob Genter Ph # (802) 899-5160
"Genter, Bob" <genterb@together.net>
Secretary - Ernie Kelley Ph # (802) 434-3674
"Kelley, Ernie" <epopmfs@together.net> OR
"Kelley, Ernie" <ernie.kelley@anr.state.vt.us>



**Don't forget to bring some snacks & 3
homemade beverages to the meeting.
If you don't have any homemade bevs,
Please bring 3 good/unique
commercial beers.**

Green Mountain Masher Calendar of Events

Date	Event	Information
1/10/05	January Mtg at Anne and Matt Whyte's	Anne Whyte (h) 879-6462 (w) 655-2070 (email) vtbrew@together.net
2/??/05	Club Brew/Feb Mtg at Andy Bessey's?	Anne Whyte (h) 879-6462 (w) 655-2070 (email) vtbrew@together.net
3/7/05	March Mtg at Jerry Gormley & Darlene Olsen's	Jerry Gormley (h) 434-3515 (email) jgormley@gmavt.net
4/4/05	Hoops & Hops/Masher Challenge at Tome Ayres and Anne Barrett's	Tom Ayres and Anne Barrett, Winooski (h) 655-5587 (email) tom.ayres@verizon.net
5/??/05	May Mtg at Bob Genter's	Bob Genter (h) 899-5160 (email) genterb@together.net
6/??/05	GMM June Mtg - Friday night BBQ at Monk's house - Grillables and pot luck dishes made with beer. Last meeting until Fall (September?).	Rich Evans (h) 899-3006 (email) monk@together.net

Please contact Tim at 434-7293 or t_cropley@yahoo.com to add items to the Masher Calendar

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brewers have a little trick. If you roast the malt a little, then phosphates are released from the barley, which increases the acidity just enough to get into the pH range. It means you get a slightly different-tasting beer. And of course it means that the beer is dark."

The waters of Dublin, sitting on 300-million-year-old limestone, are even more alkaline and require even more roasting of the barley. "What they call black malt," Maltman said. "Even then the extraction isn't that good. It means the beer has a distinct grainy flavor and it certainly means the resulting beers are very, very dark, black even." That yields the distinctive taste of Guinness and other Irish stouts.

Technology has allowed brewers to overcome the traditional limits of geology, and brewers know how to compensate for year-to-year variations in barley and hops to produce a consistent taste. For example, they know that beer


brewed in a short, squat vat tastes fruitier than that brewed in a tall vat because of the difference in water pressure pushing down on the yeast.

Research continues lengthening the freshness of beer, which generally tastes best when first made. Many flavor compounds in beer are unstable and fall apart into less desirable flavors over time. The chief culprit is oxygen. "Oxygen is death to beer," said Graham Stewart, director of the International Center for Brewing and Distilling at Heriot-Watt University in Edinburgh. Oxygen reacts with fatty acids in the beer to form compounds called unsaturated aldehydes that "literally taste and smell as if you put your head in a cardboard box," he said.

Modern breweries have been able to reduce oxygen to almost nothing. Refrigeration also slows the chemical reactions that produce the off tastes. Light is also an enemy, reacting with bitter compounds in the hops to produce an-

other undesirable compound "which really does give an intense aroma just like a skunk," Bamforth said.

Brown beer bottles, though not green or clear glass, block out the wavelengths of light that cause the molecules to break up. Some brewers get around that problem by extracting the bitter compounds from hops, a process analogous to producing vanilla extract from vanilla and modifying the compounds so that they are no longer susceptible to light. "The chemistry is really quite complicated," Bamforth said. "What you no longer get is a skunking." The hops extracts, he said, also produce a better beer foam.

Not that beer drinkers care about the technical details. Most, like the geologists in the lobby drinking beer rather than listening to a lecture about drinking beer, just enjoy what is in the mug. "It lacks the snobbiness," Maltman said. "It's more egalitarian." 

US Brews and Wort Report
12.15.04
from the Association of Brewers

Great beer is all in the rocks

If you want to brew a great beer, you need to know your geology.

That was the message from Dr. Alex Maltman at a recent meeting of the Geological Society of America in Denver.

Wine connoisseurs often talk of terroir - a French word expressing the notion that vineyard soils impart flavors to the finished wines. But data to back up the notion is sketchy, said Maltman, a professor of earth sciences at the University of Wales. And though whiskey distillers often make much of the water they use, there is little correlation be-

tween the taste of whiskey and the geology of where it is made, he said.

Beer and geology, on the other hand, are closely entwined, said Maltman. For one, geologists drink lots of beer, typically ending a long day examining rocks with a trip to the nearest bar. Mayor John W. Hickenlooper of Denver, a former geologist turned pub owner, told the geologists how an earlier geology meeting in 1988 bolstered his fledgling brewpub.

Beer is more than 90 percent water, and because almost all brewers use water from wells, not rivers or lakes, the different styles of beer were traditionally derived from the rocks that the breweries sat upon.

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glish bitter.

"Let's not forget at this time beer was not pasteurized," Maltman said. "Burton beer, somehow, did travel well. The supposition was that it was the water, but it was some decades before it was demonstrated what was going on."

Burton-on-Trent sits on sandstone rich in minerals like gypsum from water that had percolated through the rocks long ago. The waters had a pH of 5 to 5.5, ideal for extracting sugars from malted barley.

Secret to a long life? Beer

The world's oldest man says the secret of long life is a good beer every day

German Hermann Doernemann, aged 111, took the title of world's oldest man this month after the death of American Fred Hale.

The retired electrical engineer says a daily dose of a good dark beer keeps

him feeling on top of the world.

The Los Angeles-based Gerontology Research Group, which keeps records of the world's oldest people, says 26 women are older than him.

CAMRA says PU to Czech beer

They just don't make beer like they used to in the Czech Republic.

At least that's the way they see it at Britain's Campaign for Real Ale (CAMRA), the world's largest beer consumer group. CAMRA's Ian Loe says iconic Czech beers such as Pilsner Urquell are no longer the world-class examples of the style they used to be.

"The quality of Czech beer produced by some of these breweries has deteriorated. They are perhaps skimping on the quality with cheaper malt and hops and reduced lagering times. There is also

less choice of brands for consumers," he said.

Loe particularly singled out Plzensky Prazdroj, owned by the SABMiller group, which controls 47 percent of the Czech beer market. Prazdroj, brewer of the world-famous Pilsner Urquell, brews its beer under licence in neighbouring Poland and Slovakia and, more recently, Russia.

"Pilsner Urquell now is nothing like the full-bodied beer it was three or four years ago. The brewing time has been cut while the company is increasingly brewing under licence," said Loe. But brewers strongly refute the claims with Jan Vesely, chairman of the Czech Brewing and Malthouse Association, describing them as "unfair, incompetent and insulting."

"What can the Brits tell us Czechs about the quality of beer? It's as if we Czechs went to France and told them how to make champagne," hit back

Vesely. Plzensky Prazdroj insists its brewing methods and ingredients have not changed, with the exception of a new type of tanks which, it says, has not affected its beer's quality.



US Brews and Wort Report
1.03.05
from the Association of Brewers

Brewery shifts to water production for tsunami survivors

Sri Lanka's top brewery normally produces 160,000 bottles of beer a day. Now the plant has turned its technical might to producing a very different beverage: potable water for the survivors of

(Continued on page 5)

PLEASE NOTE THAT GREEN MOUNTAIN MASHERS DUES ARE DUE THIS MONTH. DUES ARE \$10 PER YEAR AND CAN BE PAID BY CASH OR CHECK AT THE MEETING. IF YOU ARE NOT AT THE MEETING DUES MAY BE MAILED TO ANNE WHYTE AT THE ADDRESS LISTED IN THE STAFF BOX ON PAGE 2. IF PAYING BY CHECK, PLEASE MAKE IT OUT TO "GREEN MOUNTAIN MASHERS."

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the Asian tsunami disaster.

The production shift by the Lion Brewery didn't come without a few problems - chief of which was that the water still looked like beer because of the color and labeling of the bottles, a company official said.

"So we then made an urgent request to get white glass bottles and they are now coming," said Naufar Rahim, a senior company executive.

The company stopped making beer after hearing reports that survivors of last Sunday's disaster that killed more than

28,000 people in the tropical island ran the risk of drinking contaminated water.

The whole plant had to be cleaned and the beer remaining in the system had to be purged.

More than one-third of Sri Lanka's coastline was devastated by the tsunami, and sea water contaminated many wells. After the disaster, the demand for liquor has dropped considerably, Rahim said.

"But it is a wonderful feeling that we can make you happy with whatever we produce - good water or good beer," she said.

House beer lifts church's spirits

Since introducing its own brand of lager this fall, St. Mark's Episcopal Church on Washington D.C.'s Capitol Hill has seen an influx of 20- and 30-somethings on Sunday mornings.

"I can't say it's a compelling reason," Rector Paul Abernathy said when asked whether the addition of Winged Lion Lager to Sunday's pub lunch menu had anything to do with the new faces.

But he acknowledged the coincidence and said with a smile, "I'll find out."

For 31 years, the beer selection was dominated by commercial brands. That changed last summer, when parishioner Rick Weber rented a kettle at Shenandoah Brewing Co. and brewed a batch of Winged Lion.

Parishioners buy pub tickets for \$10, a donation to the church, and redeem the tickets for food and beverages.

Abernathy welcomes the excitement Winged Lion Lager has generated. And he makes no apologies for serving alcoholic beverages in the parish hall.

"This is a religious community made up of people, people who do drink socially," the priest said. "We also serve nonalcoholic beverages in a way that is as attractive as alcoholic beverages. We do not encourage or dissuade people from drinking (beer or wine). And we do offer a choice."

Oat beer enters U.S. market

A cholesterol-lowering beer developed in Sweden is being launched in the US, the first market for the novel product.

The beer, made by a patented process that results in a product rich in heart healthy beta-glucan fibers, was designed at Lund university and will be marketed across the Atlantic by Beverage Marketing USA.

Clinical studies on the product are currently being carried out in Sweden.

The U.S. Food and Drug Administration has for some years allowed a health claim on products rich in oat beta-glucans and their benefit on heart disease risk and our food market is known to be more liberal than many European ones.

In Europe however brewers have already run afoul of advertising regulators for making reference to potential health benefits of their products, and marketing the product there is likely to be challenging.

In a recent interview with NutraIngredients.com, the project leader Arne Berge said: "We have to be very serious about this - we are claiming health benefits in a product that is not normally associated with health. We need to find partners who know their market and who have the guts to support the product."



Details of the Green Mountain Mashers Alchemist Beer Dinner from Ruth Miller

Hi Mashers,

Attached is the menu for the Beer Dinner that we have been discussing. Recall: takes place on Jan. 17th (MLK Day) at 6:30 at the Alchemist in Waterbury. The cost is \$55/person incl. tax & tip. Below is Jen's description of the vegetarian option, as well as some "extracurricular" activity during the dinner I know you will enjoy. So far, we have 15 signed up, and must cap it at 20. Payment is due at the event via cash, check or credit card.

This is a special menu created just for us, so please come out & support an award-

winning brewery whose food offerings are equally outstanding, and the Kimmich's that make it all happen. Contact me ASAP if you want to come and I'll add you to the list. If you cannot open this attachment, let me know & I'll send as embedded text.

Here is the list of people coming. **There is one slot available:**

Ernie Kelley & 2 guests (1 veggie)
 Andy & Terry Hunt & 2 guests
 Dan Hament
 Mark Hitchcox & guest
 Bob Genter
 Andrew Ferko & guest
 Lew Greitzer
 Jim & Mel Silvia (2 veggie)
 Tim Cropley
 John Leak
 Ruth Miller
TOTAL: 19

-----Original Message-----

From: alchemistbeer@adelphia.net
 Sent: Tuesday, January 04, 2005 9:16 PM
 To: remcomm@together.net
 Subject: RE: Attn: Jen - Beer Dinner

Ruth:

Attached is the menu for the upcoming beer dinner. Please keep in mind that we are members of Vermont Farm Fresh and we always use organic and local ingredients when possible. For strict vegetarians, we will make simple substitutions. For in-

stance, for the mussel soup we will substitute our vegetarian 'soup of the day'. The fish will be substituted with tofu and the beef with a protabella mushroom cap; all of the sauces and accompinaments will be the same.

Before each course, John will give a brief description of the upcoming beer. Then, if you would like, in the style of a wine dinner, I can tell everyone why a beer is paired with a particular course. Does it complement or contrast with certain ingredients?



The Very First Alchemist Beer Dinner

Monday, January 17, 2005

a whimsical *teaser* made with fresh hops...

Charlie

~

Organic Greens

balsamic vinaigrette, blue cheese beignet

Donovan' Red

~

Mussel Soup

garlic aiolo, smoked gruyere, crostini

Pappy's Porter

~

Pan Seared Tilapia

smoked chili-tomato sauce

Holy cow IPA

~

Vermont Angus Beef Medallion

roasted shallot demi-glacé, puree of turnip

Doppelbock

Chocolate Ganache

raspberry coulis

O-Positive blended with aged lambic

and finally, a special treat from John that you do not want to miss...

Club-Only Competition Schedule by Andy Hunt

During the December Mtg, I agreed to coordinate the AHA Club Only Competition at the request of our President for life. Here is the schedule for the rest of 05 (We won't hit the Jan Irish Red).

We will talk about how to proceed at the Jan Mtg. I hope we can organize some club brews around some entries, but we can certainly have some mini judging sessions to determine what the club enters. Another thought is that after May, we could enter the best Masher's entry from the May competition to represent the club. I would like to try and use this activity to promote

exchange of information withing the club, if we do enter anything, we should share the recipe and any tips and techniques.

Andy Hunt
"Andy Hunt" <andyhunt@us.ibm.com>

March/April 2005
Sour Beers
Hosted by Phil Clarke and the New York City Homebrewers Guild of New York, NY.
Category 17* Sour Beers

May 2005
Extract Beers
Hosted by Susan Smith and the Hogtown Brewers of Gainesville, FL.
All BJCP beer styles (Categories 1-23)*. Extract must make up more than 50% of fermentables.

August 2005
Belgian and French Ale

Hosted by Bob Kauffman and Hop Barley and the Alers of Boulder, CO.
Category 16* Belgian and French Ale

September/October 2005
European Amber Lager
Hosted by Jack Kephart and the Society of Akron Area Zymurgists (SAAZ) of Akron, OH.
Category 3* European Amber Lager

November/December 2005
Baltic Porter
Entries due November 4, 2005.
Judging will be held November 12, 2005.
Hosted by Brian Lanus and the Ruffian Brewers of Suffern, NY.
Category 12C* Baltic Porter

*See new 2004 BJCP Style Guidelines at <http://www.bjcp.org>.



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c/o Tim Cropley
235 East Main St.
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