

A Horse of a Different Color

Horsy. Mousey. Wet Dog. Horse Blanket. Barnyard. If the game was Password and the receiver was a home brewer, certainly they would guess the password is "brettanomyces". We have all grown as brewers and enthusiasts knowing these flavor and aroma associations, and understanding their effects upon lambic ales and beers like Orval.

But years ago I read an article by Tomme Arthur published in Zymurgy that offered a different spin. The concept was that if you learn the rules of brewing with brettanomyces you can create flavors not achievable by other means. This was not in the context of brettanomyces as a companion fermentation agent as it is in lambic or post fermentation finishing as in Orval, but actually as a primary fermenter. I found the notion intriguing but data concerning Brettanomyces as a primary fermenter suggested it was less than viable for the amateur.

Some time later I had a chance to sample a beer that energized me to learn more. It was brewed by Nate Sampson of Eugene OR and was made entirely with Brettanomyces bruxellensis (henceforth referred to as brett B.). It was pilsner-like, very grainy with a distinct rough edge that immediately altered my perception of what a brett beer could be. Another microbiologist/brewer, Al Buck of Hillsborough NJ, was starting to compile data on another brett strain, Claussenii (brett C.). Tapping into these resources, our online community began to see how unusual the rules were when dealing with this odd yeast. Armed with the knowledge contributed by Nate and Al we began to experiment - and encounter the unexpected...

Pineapple. Raisiny. Peach-like. Spicy. *Clean*. The game just got a lot more interesting.

With several finished beers ready for evaluation an online event was scheduled. All participants shipped samples across the nation to each other. A date and time were established to collect in a chat room. The beers were then sampled together - one at a time - and we shared our thoughts and questions. Brewing pioneer Tomme Arthur was invited to take part, and having accepted joined us to provide his unique insights. The following describes our results with some basic specs and short excerpts from the tasting session.

Brewer: Steve Gale, Landing, NJ

Beer: Berliner Weisse

Strain: Claussenii

Starting Gravity: 1.035

Finishing Gravity: 1.005

The question here was what will brett do when deprived fermentables? 300 to 400 mL of brett C. was pitched into a 1.035 wort made from a classical Berliner weisse recipe. The result was a beer that fermented out entirely in 4 days. Racked after 7 days, the beer was kegged and force carbonated. 5 months later it had remained unchanged, differing only in that it had mostly clarified.

N8: very soft, delicate, some good lemon citrus.

Mike T: and this had no lacto b?

SteveG: None, all Brett C.

Tomme: It has a very pleasing wheat note to it. It would be an excellent component to a wit bier for acidity if you were looking to blend it in.

Cisco: I get lemon apple flavors and aromas. Hard to tell that it's a brett.

AIB: Citrusy, but not crazy pineapple.

SteveG: I think the reason for that is there was an insufficient "gravity engine" for the brett to take the next step

Tomme: Definitely not crazy pineapple. Is this White Labs Clauseni? I find it has some Champagne like qualities. Grape Skin, white grape and a lemon zested yeast.

SteveG: WhiteLabs, yes. Its funny, I think it is oddly clean for a sour beer!

Cisco: I agree Steve!

Tomme: Steve what was the fermentation like? This seems like a fun beer.

SteveG: Fast and furious. This sucker took off and seemed pretty much played out after 4 days.

Sean Paxton: Did you Oxygenate this beer Steve?

SteveG: No. I think that will be a question to ask ever beer of the night! Aeration seem to have a lot of impact, as does lack there of.

Brewer: Al Buck, Hillsborough, NJ

Beer: Silence of the Lambicus

Strain: Lambicus

Starting Gravity: 1.054

Finishing Gravity: 1.007

Al got involved with Brett C in the spring of 2006. His first description of the developing yeast's aroma was "cheese and toenails". When I caught a whiff of my Berliner I was certain Al must have passed off the wrong slurry, I'd have sworn some wheat beer yeast must have been at play. But I smelled the slurry before it went in, Al's description – as unfathomable as it may sound – proved very accurate. Al has been brewing for 6 years and works professionally as a microbiologist.

AIB: This is WYeast which seems to have that cherryness.

SteveG: There is some plant where I live that has this beautiful sweet, grape-like aroma. This reminds me of that a bit.

Sean Paxton: Some cherry.

Tomme: It certainly does. It also seems to be very evocative of some lambic that showcases stone/pit fruits.

Mike T: Again pretty clean, I haven't played with lambicus by itself and I was expecting more funk.

Sean Paxton: Al, did you oxygenate?

AIB: No wort O2. I've had some crazy sourness from clausenii when O2 the wort, so I passed.

Tomme: I love the acidity. It's pronounced but still very much not as developed as a beer produced under a LAP (Lactic Acid Producing) bug like Pedio and Lacto.

Mike T: Might the oak tannin finish just be dryness?

N8: Yes, I figured that it was an attribute of the dryness, not oak, But I can see it as an oakiness.

Tomme: Absolutely. A very lingering dryness. I associated some of it with yeast autolysis.

AIB: That does seem to have merit for using large slurries.

Brewer: John Francisco, Tucson, AZ

Beer: Cisco's Brett CL Saison

Strain: Claussenii

Starting Gravity: 1.064

Finishing Gravity: 1.010

John Francisco of the Tucson club *Los Cebadartistas* has been brewing this beer for years, last November a version of it won BOS runner up at the Franco-Belgian Challenge Cup. This batch was 10 gallons, split to compare the effects of WLP645 brett C. and a more known element - Wyeast 3726 Farmhouse Ale. Like the Berliner Weisse, the brett C. version showed no presence of "funk", though its character was extremely robust.

AIB: What do you attribute to less acidity than Steve's? Great spice by the way.
Cisco: O2 maybe??
Tomme: The high CO2 content seems indicative of the aromas found in Duvel. There is a whiff of light apple and pear for certain.
SteveG: Man, this is a card carrying Belgian type specialty ale!
Tomme: It really would be served quite well in a Strong Ale category indeed. It's got great flavors. Any spices? I get a long sweet finish that is seemingly tempered by a peppery note that is not coriander based. More herbal.
Cisco: Coriander, grains of paradise and tangelo peel from my tree. Plus one and a half pounds of dark candy syrup and one pound of cane sugar. I also cooked the fermenters up to 90F for a couple days then let it come down.
SteveG: Tomme, does this remind you of any brett results you've experienced?
Tomme: My initial reaction when I opened it was that it reminded me of the Deproof Reinhart beer.
Cisco: It was a 10 gallon batch split into two 5s. One with brett the other with the farmhouse strain. I much prefer the brett beer.
SteveG: how do they differ?
Cisco: The brett is really spicy and a lot more complex flavor profile.

Brewer: Sean Paxton, Sonoma, CA
Beer: Sonoma Pale Ale
Strain: Anomolous
Starting Gravity: 1.060
Finishing Gravity: 1.007

Sean is a professional chef in the San Francisco Bay area with 14 years of brewing under his belt. He is currently working with Vinnie Cilurzo in preparation for the 2007 Northern California Homebrew Festival Friday night dinner. The beer he doled out, *Sonoma Pale Ale*, used all Amarillo hops and only Brett Anomolous (no O2 or culturing). The result expressed a very strong character of pineapple and other fruits.

N8: I'm curious to taste a pineapple beer :)
Tomme: Our Mo Betta Brettas was a pineapple bomb
AIB: Yes, tartness, cascade, and fruity pineapple
Tomme: Mine looks and smells good...although there is some chlorophenol thing that is like pineapple and Brett based. It very much leads off smelling like Hommel bier with a funky side to it.
Cisco: ...and peachy! Apricot and peach come from amarillo hops - I've tasted it many times here.
Sean Paxton: I was thinking a lot about wine, all the flavors we taste in a zin, but no raspberries or black peppercorns.
SteveG: This seems more classical for what I would expect from Brett C. Ferment temps, O2, pitch rate?
Sean Paxton: Pitching rate of just a pack, opened and pitched right in. Fermentation in 2 days. FG, last time I checked was 1.007.
Mike T: Dryer than it tastes.
SteveG: Wow, really!

Brewer: Nate Sampson, Eugene, OR
Beer: Sanctification inspired brett beer
Strain: Bruxellensis and Lambicus
Starting Gravity: 1.058
Finishing Gravity: 1.004

Nate has spent the last 15 years as a professional microbiologist. The beer tasted in this session first appeared in a swap 15 months earlier and was the inspiration for this project. In its youth this brew was a very different animal (see above for description). This event was the third time his Sanctification inspired beer was involved in a BBB homebrew swap, having changed considerably each time. Nate prepared the yeast in a lab over the course of one year, though much of the resulting slurry was sent to a local brewery. It was quite a relief to discover the propagation process could happen on a much faster time table!

SteveG: Wow, instant hit of big fruit when the cork came out.
AIB: Curious funk + fruit.
SteveG: Ah, first really funky aroma of the event!
N8: This is another Sanctification style brew. Pils, acid malt, and Vienna. Oak was added several months later.
SteveG: Its a lot different from that first bottle!
N8: Isn't it, Steve? I'd expect alot more tartness.
AIB: Defintely brux with fruit, not very sour surprisingly.
Mike T: Call me crazy, but I almost get a cured meat flavor.
Sean Paxton: I agree Mike T, it smells more like a lambic but as you taste it, it has a light sweetness, and finishes with a light tartness.
AIB: Tetrahydropyridines is that meat.
SteveG: I cant say I get the meat thing. More than anything else I get fruit confection.
AIB: I think it would sour up a bit - how old is it?
N8: December '05.
SteveG: N8, I think this beer went back up again. I thought the first was an inspiration. I didnt like the second bottle months later, but this is really nice.
N8: I don't try this all that often, but everytime I open a bottle it's different from the last time I tried it. Constantly evolving.
SteveG: N8, I wonder if at some point evolution will have peaked?

Brewer: Michael Tonsmeire, Washington D.C.

Beer: Cherry Brettia

Strain: Claussenii

Starting Gravity: 1.060

Finishing Gravity: 1.010

Mike is fairly new to brewing, having started 2.5 years ago after taking a *Beer Brewing and Appreciation* class during college. Despite this, in the last year he has produced 8 batches with brett. This one had an interesting twist, beginning life as a Mo' Betta Brettia clone. But Mike added 1 lb or dried cherries that had been rehydrated in Pinot Noir to the secondary. We tasted this brew having been in the bottle only 3 months – quite an infant for a brett beer!

SteveG: Cool aroma - autumn spices. Smells like potpourri.
Mike T: It is a Mo Betta Brett clone (Brett C) with dried sour cherries and pinot noir wine.
Cisco: Big cinnamon, with cherries in the background.
Mike T: I gave this one 60 seconds of O2 and servomyces.
Sean Paxton: Very nice, cinnamon, cherry, hint of oak.
AIB: The pinot was w/ the cherries yes, no oak right?
Mike T: The cherries were rehydrated at 160 in pinot noir, drained and then pureed with about a cup of "fresh" pinot.
Cisco: How was the cinnamon added?
Mike T: No cinnamon, just the yeast I guess.
SteveG: Mike - how much of this autumn potpourri thing do you attribute to the cherries?

Mike T: Not much of it, although this was my first time using dried cherries. I think it is an interaction of the cherries and the yeast, I think the fruit/wine is covering up some of the yeast flavors making what remains taste spicy.

Sean Paxton: Almost a clove/allspice finish.

SteveG: Sean, this is like a glass of apple pie!

Brewer: Mike Mraz, El Dorado Hills, CA
Beer: Brettanomyces Experiment
Strain: Claussenii
Starting Gravity: 1.060
Finishing Gravity: 1.010

Mike had experimented with brett brewing by adding sediment from Russian River's Temptation and Supplication into a secondary fermentation. Those results inspired further research, applying various brett strains to a single, simple wort. Using a recipe loosely based on a published Sanctification recipe, Mike made 15 gallons of wort and split them between White Labs Claussenii, Bruxellensis, Lambicus, Wyeast's Anomolus, with 3 gallons going into a control batch fermented with WLP500. One very interesting observation was the difference in time before active fermentation: WLP500 was 12 hours, Anomolus 24 hours, Bruxellensis 48 hours and Lambicus 5 days! The one we selected for the line up, Claussenii, took 11 days! This was still working having only dropped to 1.019 before packaging. Surprisingly there was no adverse impact when opening the bottles.

Cisco: Great POP!!

Mike T: Very subdued, nice mild brett character with some orange/spice.

N8: Beautiful pour.

SteveG: Wow - now THIS is apples - smells like sweet cider.

N8: I love the huge carbonation bubbles floating up to the top of the glass.

Cuda: This beer when ice cold is very clean like a golden strong when it warms the fruit comes the in the nose.

SteveG: I'm used to C. producing flavors like more robust fruit, this is really interesting

N8: Does anyone get a slight aroma of apple pipe tobacco in the nose as it warms?

Sean Paxton: I do

N8: reminds me of when my dad would smoke a pipe with apple tobacco.

SteveG: So its not quite "apples", it's "apple something".

Sean Paxton: I am getting a cider-ish finish, like a French cider.

SteveG: Very sweet aroma but a hint of strawberry in both smell and taste.

Mike T: I could go tropical fruit, maybe mango.

Cuda: I get the apple and maybe strawberry it is a sweet fruit.

Brewer: Steve Gale, Landing, NJ
Beer: Olde Ale
Strain: Claussenii and culture isolated from a Fantome bottle
Starting Gravity: 1.100
Finishing Gravity: 1.026

With one gravity extreme explored, it was important to see what brett could do given the opposite extreme. Steve Gale has been brewing since 1990 and currently runs the message board that sponsored this project.

Cisco: Deep rummy raisiny nectar esters.

AIB: Crazy caramel, slight tart, tons of fruit, like smashed fruit from Gallagher.

Mike T: I get chocolate covered coconut, the taste is very strong molasses.

Cisco: Soft deep aged fruity flavors with a dry finish with a hint of wine.

Sean Paxton: Very dark, hints of dark stone fruit - plum, raisin, cherry, some apricot.
Cisco: A little tartness going on.
N8: These were bottled off the keg, Steve?
SteveG: Yes N8.
Sean Paxton: Would be great as a cooking beer - add this to a dried fruit compote over vanilla ice cream.
Cisco: Definitely way beyond barley wine.
SteveG: BTW, this is the beer I heated to stop the Fantome yeast.
Sean Paxton: How hot?
SteveG: 150ish.
N8: Why did you stop it?
SteveG: I remember struggling with that decision. I wanted more C character, the Fantome was starting to dominate.

Producing beer like this is not particularly difficult, but it does redefine the brewing process to some degree. Aspects of brewing that can be loosely followed in conventional brewing become critical in manipulating brett. For that reason this article did not focus on production, that would require its own piece. As more people meet with success in brett brewing, detailed data on production should become more and more available.

Competing with an all brett beer can be a challenge and at this time style guides do not make specific reference to such brews. They can fit into existing categories and potentially do very well. One visitor to the sponsoring homebrew message board, Sebastian Padilla, took 1st place in the French & Belgian Ale category at the 2006 Franco-Belgian Challenge Cup with an all-brett beer. The Berliner Wiese that was tasted in this swap won a 1st place in the 2007 NHC regionals (east). However brett is very far removed from ale and lager yeasts and the finished beers presented at this swap effectively illustrated how varied all-brett brews can be. Trying to fit beers made with brett into existing categories may well prove to be an increasingly difficult task as its distinctiveness as a yeast is easily as pronounced as ale yeast is to lager yeast. Perhaps some day brett brewing will be seen not as a beer style or even a category but as a third beer genre to *ale* and *lager*.

Special thanks to Tomme Arthur for his guidance and experience in this new frontier.

"I was thankful for the opportunity to participate in this Brettanomyces exchange. I have worked with Brett in many of our barrel aged beers. We are also looking to create a 100% Brett fermented beer in our brewery very soon. With this in mind, I was interested in the beers which were sent to me as a way to explore the numerous permutations that a Brettanomyces fermentation affords. To say it was interesting is to devalue the time and energy that these brewers put into their beers. Each provided a glimpse of a future I want our beers to explore. All in all, it was an incredibly rewarding experience. Those seeking the twists and turns of brewing possibilities need look no further than these brews for guidance. I look forward to more experiments like these in the future."

Tomme Arthur
Director of Brewery Operations
Port Brewing and The Lost Abbey