

THE NATURE OF INNOVATION IN AMERICAN CRAFT BREWING

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From one of our many friends in the great (craft beer) state of Colorado in the USA, namely Head Brewer at the pioneering Wynkoop Brewing Company in Denver, Charles Andrew (Andy) Brown, we have received this fascinating article on the nature of innovation in American craft brewing. The SBR wishes to thank ‘US correspondent’ Finn Bjørn Knudsen for convincing Andy into writing this article for us.

Craft breweries in America have managed to continue growing steadily in recent years, up 11 per cent in 2011, according to the Colorado based Brewers Association. This is great news for an industry that really only began in the 1980s and saw some challenging years in the 1990s. American consumers have driven this growth by choosing to purchase these more flavorful, innovative beers, but what sets the American craft breweries apart is that ability to take the ideas from the past and, not being overly bound by history or tradition, create something new and interesting from these ideas – the melting pot of brewing innovation.

The famous actor and director Clint Eastwood has stated that the only original American art forms are jazz music and western films, but fans of jazz music know that it is based on European harmonies and instrumentation, or that the “spaghetti westerns” of Italian director Sergio Leone are perhaps more artistic than those of John Wayne. American craft brewing also draws influence and technique from European precedence, but in some cases the influence has crossed back across the Atlantic Ocean, inspiring European brewers to make American style India Pale Ales or to reinvent lost styles of beer. This phenomenon is described in the January/February 2012 issue of *Imbibe Magazine’s* article “As American as IPA”, which tells how Scandinavian brewers such as Denmark’s Anders Kissmeyer had been influenced by American craft brewers to start his Nørrebro Bryghus, or how Kjetil Jikiun’s Nøgne Ø

brewery in Grimstad, Norway, has forged a unique identity making beers that were inspired in part by what he had seen in America.

Every year the Brewers Association hands out an award at the annual Craft Brewers Conference called “The Russell Schehrer Award for Innovation in Craft Brewing”. Many well known American craft brewers such as Garrett Oliver of Brooklyn Brewery, Vinnie Cilurzo of Russian River, and Dick Cantwell of Elysian Brewing Company have been the recipient of this award. Russell Schehrer was the first brewmaster at the Wynkoop Brewing Company, which was founded in the city of Denver, Colorado, in 1988. Russell was known for his big personality and for the creative beers that he made, including beer flavored with chilies, mead, cream stout, hard cider, and cask conditioned beer, of which he would often say, “warm and flat is where it’s at!” His influence on the emerging craft beer culture was strong enough that, after an early and unfortunate passing, the award was named after him in 1997. An examination of early brewing records from the Wynkoop gives a glimpse into what was regarded as innovative at the time. These early recipe sheets and the Russell Schehrer award itself are the basis of an inquiry into what it means to be innovative then and today.

The four hop varieties used in all early Wynkoop recipes were Bullion, Willamette, Cascade, and Hallertau, which might



have been the only varieties available at the time. An analysis of hopping rates in Russell's India Pale Ale shows a total hop usage of 290g/hl. Contrasting that with a very common usage rate in current American India Pale Ales of over 1100g/hl, as reported by Matthew Brynildson of Firestone/Walker brewery in *The New Brewer* (the membership journal for the commercial members of the Brewers Association), it is clear that the use of hops by American brewers has increased greatly over the last twenty years. In fact, this recipe would probably be regarded more as a nice Pale Ale today! There is some historical evidence that English East India Pale Ales brewed for export in the 1800s would have been hopped at rates exceeding that of the American brewed versions, but the alfa acid levels of the hops used were probably not as high as the hops currently being grown. The recipe also includes the use of oak chips in the conditioning tank, possibly recreating the flavor of a beer stored for a long ocean journey in oak casks. It would have been quite unusual to see an oak aged American beer in the 1980s. Looking at Russell's use of brewing salts in the brewing liquor, we see that he adjusted the water chemistry of this beer to be similar to that of Burton-on-Trent, so famed for being the birth place of pale ale. The trend for many American brewers who are making these very hoppy beers is to stay away from excessive mineral character and just concentrate on hop aroma and flavor, but this is a good example that what is regarded as innovative now is often copied from the past, though with a new twist.

A beer still made at the Wynkoop is a chili infused golden ale called Patty's Chile Beer, first brewed in 1989. Chilies are commonly grown in the American southwest and are often used in the spicy regional cuisine. A person who supports eating and drinking products that do not have to travel long distances now has a name and a movement – a “locavore” – so Russell was clearly ahead of the curve there. The Wynkoop Brewery now cans some beers and delivers them locally with a horse drawn wagon, thus reducing our carbon hoofprint.

A common sight on the bumper of many craft beer drinkers' cars in America is the sticker proclaiming “Think Globally, Drink Locally”, although the vehicle is often a large one that

consumes a lot of petrol. The use of spices in beer is not a new idea – just ask some Belgian brewers – but it is now very common to use fruits, vegetables, herbs, and spices for American craft brewers. Beer and food pairing events are very common, as craft beers search for complexity and flavor to rival wine as the beverage of choice for food pairing.

The base malt used on most of these early Wynkoop beers was Hugh Baird pale ale malt, a darker more modified malt with a color spec of about 4 degrees Lovibond (ca. 8 EBC) imported from England. Typically, American brewers now have their silos filled with very pale base malt, of about 1.8 degrees Lovibond (ca. 3.5 EBC), not because we are making the very pale beers this malt was intended for, but because of the lower domestic price and the fact that the maltsters make malt for their biggest customers, the large American mega-breweries. Bags or super sacks of specialty malts are then added to the recipe to build body and malt flavor. Craft brewers in the future could start to command that this base malt is made to their specifications, but this is currently only an option for a few of the largest craft breweries.

Any discussion of malt usage for craft brewers has to include the fact of the proliferation of higher alcohol or “imperial” beers, sometimes topping out at over 20 per cent alcohol by volume. Tyler King, head brewer at California's The Bruery, →

WYNKOOP BREWING COMPANY BREWING LOG

BEER TYPE/NAME: Chili BREW NUMBER: 111

GRAIN USED: AMOUNT (LB/KG) 290 HOPS USED: TYPE & AMOUNT (LB/KG)

CRYSTAL: 1 1ST: 1.0

ROASTED: 1 2ND: 1.0

WATER TREATMENT: BITTER/PALD BROWN/MILD PORTER/STOUT LT. LAGER/WHEAT

ACTIVITY TIME BRIX (S.G.) TEMP (C/F)

PRE-HEAT START 8:15 72 72

MASH IN 8:25 1057 69

RECIRCULATE 10:40

TO KETTLE 11:00 22

SEARGE START 11:05 22.4 74

SEARGE ON-DUTY: 11:10 145

SEARGE FINISH 12:05 1.0

FULL KETTLE 12:40 1.0

SOIL & 1ST RINS 12:40 1.0

2ND RINS 1:00

3RD RINS 1:25

KETTLE OFF 2:10 11.0

MILLIFLOOL 2:15 10.0

TO P.V. #2 2:43 10.0 76

VOLUME: 5.3 YEAST: 50

DATE TO STORAGE TANKS 11-18-89 VOLUME: 5.1 BRIX: 14

CLARIFIER: 50g galena 10g 1000

DATE TO SERVING TANKS 5-11-89 VOLUME: 4.75

DRY HOPS:

FED. TAX PAID: DATE: 4/21/89 CHK # 3225 PERIOD: 21

ST. TAX PAID: DATE: _____ CHK # _____ MONTH: _____

DATE TAPPED: _____ BY: _____

DATE FINISHED: _____

COMMENTS: _____



detailed in a presentation at the last Craft Brewers Conference in San Francisco their method of production for this type beer. After the fermentation of a wort that would normally produce a 12 per cent alcohol by volume beer, they then agitate and gradually feed their high gravity yeast strain a glucose/sucrose sugar blend every day until the yeast finally renders itself inactive. This is an innovative way to drive up the alcohol content of beer, and other breweries, like Scotland's Brew Dog, have used freeze distillation to drive the alcohol content even higher, but other brewers have been producing naturally fermented beverages of 20 per cent alcohol and higher for hundreds of years: the sake brewers of Japan. Sake relies on the interaction of koji (an aspergillus fungus) and yeast to gradually break down starches in rice to fermentable sugars for brewing, much like The Bruery's technique for producing high alcohol beer. It is interesting to note that the United States government considers freezing beer to concentrate the ethanol an act of distillation and illegal under a brewer's license. The production of these super strong beers are innovative, but not without historical precedents.

With a wider range of styles available than ever before, and many new breweries starting or in planning, the future

is promising for American craft breweries. Alan Moen's recent article in the magazine *Brewing and Beverage Industry International* makes the case that much of the recent growth in volume has come from expansion by the large regional brewers, or those producing over 75,000 HL of beer per year, but much of the excitement in the industry comes from the new players, small but adventurous. "Sour is the new hoppy" was a phrase thrown about at last year's Great American Beer Festival, and perhaps it reflects American desires to move beyond the perception that we dump a lot of hops in all the beer we make. Clearly, the consumers who buy craft beer are the fuel that fans the flame of innovation, for without them we are just making these beers to impress ourselves and other brewers. The fact that the American craft industry has influenced or impressed brewers throughout the world to some degree is great, but it should be acknowledged that what is new and innovative in craft brewing, now or 20 years ago, could actually be old ideas tried by people who are not afraid of taking risks. ♪

ABOUT THE AUTHOR

Charles Andrew Brown, or Andy, is currently in charge of all things beer related at the Wynkoop Brewing Company. He attended the American Brewers Guild Craft Brewers Diploma Program shortly after moving to Colorado from his home state of Maine in 1999, followed by a brief internship at the Elysian Brewery in Seattle. After brewing school, he landed a job brewing at Left Hand Brewery in Longmont, where he became head brewer and earning an Associates of Science Degree from Front Range Community College. Then two years at Oskar Blues before becoming the first brewer the Wynkoop ever hired from outside the company.