

RECREATING 'IMPERIAL EXTRA DOUBLE STOUT'

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The following talk was given at a joint Brewery History Society / British Guild of Beer Writers conference held at Fullers Brewery on Thursday 24 March 2016.

In talking about our recreation of A. Le Coq's Imperial Extra Double Stout, I really need to go back to 1993 when we decided to research a porter recipe. In delving back through our brewing records of the 1830s - 50s, I was struck by the lack of standard formulations in those days. The proportion of malts varied dramatically from brew to brew and yeast strains were freely exchanged between one local brewer and another. I concluded that public expectations were not particularly demanding. We brewed two separate recipes, both delivering 4.8 - 5.0% abv beers. One, from 1832, was brewed with 40% brown malt and 60% pale, while the other, from 1859, comprised pale, crystal and black malts. The latter clearly illustrated the transition that brewers had made from the traditional brown malt grists of the eighteenth century. It produced a less dry and slightly less astringent palate. Moreover, it had similarities with the bottle conditioned Guinness we were bottling at that time. We exported 1859 Porter to the U.S.A. but were instructed to change the name to 'Historic Porter' lest an unsuspecting public supposed that it had actually been brewed in 1859. I remember remarking that, if our stability was that good, I would be a very happy man.

The historian Peter Mathias referred to Porter as 'the first beer technically suited for mass production at contemporary standards of control'. In the eighteenth century, high gravity Porters were called 'Stout Porters' - meaning 'strong'. Subsequently the 'Porter' qualification was dropped and they were known simply as 'Stouts'.

A high percentage of coloured malts, a very high hop rate and a high alcohol content had all served to create a pretty robust product which did not suffer from the problems of high fermentation temperatures encountered by ale brewers in a pre-attenuation era. The resultant 'Stout' was held in vats to condition over a twelve month period and subsequently withstood the vagaries of travel and fluctuating temperatures which far flung markets promised. During this period, complex flavour changes evolved. What started as a lifeless, bitter, acrid product softened during secondary fermentation and matured.

In London, the historic hub of Porter brewing, Barclay Perkins Brewery supplied their 'Extra Stout' to a Belgian merchant called Albert Le Coq. He, in turn, bottled it under his own label and shipped it to the Baltic regions - including St. Petersburg and other Russian cities. A well judged gift of 5,000 bottles to the Russian military hospitals of Catherine the Great was rewarded with an Imperial Warrant of Appointment and 'Imperial Extra Double Stout' was born. Later Le Coq was invited by the Tsarist government to brew this legendary beer within the Russian Empire and in 1912 production commenced in Tartu, the former province of Livonia, now Estonia. The brewery remains in existence but production of their original brand has long ceased.

In 1998 an American importer approached a U.K. agency to source an authentic version of this beer. The Tartu Brewery agreed to provide the provenance and asked that it should be brewed by a small, independent brewery with experience of Porter style beers. We seemed to fit the bill and took up the challenge.

With hindsight, the spring water from which we brew in Lewes had similarities with that drawn at Barclay Perkins Brewery in Southwark. Tables in A.J.B. Scholefield's *The Treatment of Brewing Water* (1955) showed similar levels of calcium carbonate, at 162 ppm and 148 ppm respectively, and calcium sulphate levels of 20 ppm and 19 ppm. In addition our old well had seen sodium chloride levels in excess of 200 ppm with seasonal fluctuations, the South East London water being quoted at 248 ppm.

Scholefield stated that for stouts and black beers the waters most suitable were 'those with fair amounts of calcium and magnesium carbonates, with some chlorides, but sulphates in no large amount'. So, we saw this as a happy coincidence.

As far as the recipe was concerned, the Tartu Brewery were as helpful as they could be but not exactly precise. We all researched and I relied heavily on the recollections of the generation of brewers who had produced Barclay Perkins Russian Stout in the 1950s. The resultant brewsheet comprised a grist of 62.5% Pale Ale Malt and 37.5% Coloured Malts - a combination of Amber, Brown and Black. This was supplemented with Invert Sugar in the copper which, ultimately, contributed 15% of raw materials by weight and around 20% of the wort composition. We settled on an original gravity of 1106°.

Working on assumed alpha acid values of around 4% for hops grown in the 1800s, we adjusted the historic rate of 15 lbs per quarter to 11 lbs using Fuggles and Goldings in equal measure. The resultant figure of 6 lbs per barrel was seven times the rate afforded to our Best Bitter at 1040°.

After consulting H.E. Wright's *Handy Book for Brewers* (1892) we decided on an initial heat of 152°F and a subsequent stand of ninety minutes as being both authentic and sensible. A three hour boil was required and hops were staggered from copper up at hourly intervals in equal proportions. Worts were collected at 60°F and fermented with a pitching rate of 2.25 lbs of our yeast per barrel. Intensive aeration of worts, using a circulating pump with a fish-tail discharge, was periodically employed between 16 to 40 hours after collection. The vessel was skimmed at 64 hours, having fallen to a PG of 1040° with a heat of 82°F.

We have never been able to measure the colour on our tintometer - 'black' must suffice - but the A.B.V. post primary fermentation is around 8.7%. This increases to between 9 and 10% during subsequent storage and E.B.U. values of 122 fall to below 50. Yeast counts of 3 4 M/ml fall to between 1-2 M/ml with the formation of a tight sediment in the tank.

Our American importer was anxious that authenticity should extend to the original packaging - a long neck, corked bottle with a facsimile label. The label stated that it was brewed 'under the supervision of the Board of Trustees of the A. Le Coq and Tartu Brewery, Estonia'. We have yet to see them, but they would be very welcome at any time.

The search for a corked bottle led us to Gales at Horndean who had recently installed just such a facility for their Prize Old Ale. Trials indicated that any idea of sterile filtration and re-seeding might prove problematic as they were unable to push enough through a membrane filter to do a trial bottle. Instead, they adjusted the yeast count from an actual content of 1.0 M cells per ml to 5.0 M/ml and 7.0 M/ml in order to gauge the worst scenario. Forcings over a two week period at 28°C showed that less yeast, in fact, improved conditioning.

What had maturation done for the beer? B.R.I.'s taste panel offered the following appraisal:

Aroma

- " Warming and vinous - port, sherry
- " Spicy - ginger, aniseed, liquorice
- " Sweet
- " Roasted - dark chocolate, smoky, leathery
- " Molasses

Taste

- " Blue cheese
- " Tobacco, peaty, ashy, liquorice
- " Sweet
- " Warming and solvent
- " Dark chocolate
- " Spicy
- " Thick, chewy
- " Burnt, roast, smoky
- " Woody
- " Liqueur filled chocolate

America was champing at the bit and we agreed to bottle the beer, after nine months storage, in February 2000. It reached New York in March. Our importer was ecstatic:

Just a quick note to tell you that we are delighted at the aroma, flavour and taste profile. As we wished so much, even some tart/sour undercurrents can be tasted. We certainly do not want you to change anything in the recipe! Leave everything as is.

It was launched at the historic Russian Tea Rooms and got good reviews. *Ale Street News* wrote, 'Massive nose and flavour - liquorice, pomegranate, currants, prunes, toffee, celery, molasses, spare ribs. What isn't in this beer? So complex you can find almost anything'.

At home, B.R.I.'s tasting panel had been a little more reserved: 'An intense flavour which is complex and distinctive. The roast, alcoholic and spicy notes combine in this unusually sweet and sour beer'.

All seemed joy until four months later, in July, when I became aware that some of the Imperial Extra Double Stout bottles I had left in my office had corks which were slowly rising up the neck of the bottle to be restrained by the foil capsule and that releasing this had an effect akin to discharging a champagne cork. The majority of the bottling was residing 3,500 miles away in a country that is not averse to litigation and I was concerned to put it mildly. By the end of the year we were getting a few reports of near misses but, thankfully, survived to tell the tale.

Upon reflection, we should have heeded the fact that Georgian brewers and, indeed, Barclay Perkins, had apparently held their stouts for twelve months rather than the nine we had afforded. At any rate, we had brewed another batch and refilled our tanks shortly after the trial brew had been bottled. We kept an eye on this but little appeared to be happening.

In fact, a volcano was smouldering; after what one might call a pregnant pause of nine months, the beer sprang to life and underwent a startling secondary fermentation. At its height we were releasing 30 lbs of pressure off the tanks overnight. When it had exhausted itself we decided to sample the beer and send it to B.R.I. for analysis.

It became apparent that, alongside our own depleted yeast strain was a healthy population of wild yeast which resembled it in all but a slight reduction in size. We asked them to attempt identification and they found 71% of D.N.A. bands matched *Brettanomyces claussenii* while 48% matched *Pichia farinosa*. They then sent it to an independent organisation for D.N.A. sequence analysis and this revealed 100% sequence identity to type strain *Debaromyces hansenii*, which was subsequently added to B.R.I.'s profile bank.

I can tell you little about it except that it was first isolated on mushrooms in the 1920s, is often found in salty environments, has a gene that is strongly homologous to the *Saccharomyces cerevisiae* Nha1 gene and comprises two strains, one of which has greater osmotolerance than the other.

It would appear that some time after our brewing yeast had proved ineffectual during secondary fermentation, the *Debaromyces hansenii* (which we assume is present in very low numbers within our yeast strain) comes into its own and, after a lengthy lag phase, kicks in to dramatic effect.

For all the worry, the 1999 vintage exceeded our expectations and won a Gold Medal at the Brewing Industry International Awards after it had been in bottle for two years. Subsequent brewings were kept longer in tank and made superb condition but this was significantly diminished during transportation and contract bottling. Gone was the fear of exploding corks but so too was the essence of a live product - condition appeared more variable and restrained although the beer remained sound of palate. I believe the wine industry anticipates one in twenty bottles being 'corked'. For a beer of this nature, low levels of CO₂ do little to prevent this. In essence, when it was good it was very, very good and when it was bad it was not undrinkable.

Following the closure of Gales, we decided to forgo the authentic packaging. We held the beer in tank until secondary fermentation was complete and then bottled it, with a crown closure, at the CO₂ level that had evolved during conditioning. Prior to bottling, it was chilled and transferred to establish an even yeast count. The beer has, so far, been the recipient of a national or international award every year since it was first brewed in 1999.

I feel that any brew emanating from a local brewery should have a bit of local provenance. People ask why on earth Lewes should produce a Russian Stout. In fact, there are historic events which endow the Town with very fine credentials.

During the Crimean War, Lewes had been chosen for the confinement of 'Russian' prisoners. Some 350 had been interred in the old town jail, the officers being on parole in the Town. These soldiers of the Russian Imperial Army were mostly Finnish and Swedish. They were treated well and a local paper recorded

The men are made as comfortable as possible and are said to like their food amazingly. They have taken up manufacturing puzzles and other toys in wood, which they dispose of to visitors and to shops in the Town. Visitors have been admitted to them freely and have been as numerous as five hundred in a day and money has been taken in that period to the extent of forty pounds: it is known that at Christmas the prisoners, after spending considerable sums in purchases in the Town, possessed above one thousand pounds in cash. Scarcely a prisoner, we are told, is without a watch, either of silver or gold.

Unaware of this, through the offices of the Swedish Embassy, the Emperor of Russia donated to each prisoner the sum of sixpence for hot cross buns at Easter.

The prisoners were allowed out for walks on the Downs but, despite such favourable conditions, there was the occasional escape attempt. Again, the local paper recorded

another of the Russian prisoners escaped on Friday. He was shortly afterwards discovered in the King's Arms, a public house not far from the prison, where he had just purchased half a pint of rum.

When the prisoners were repatriated at the end of the War in 1856, the Town turned out to wish them well, a local band joining the procession to the railway station. Czar Alexander II sent a letter thanking the people of Lewes for their kindness and erected an obelisk memorial in St. John's churchyard to honour the 21 prisoners who died in captivity. It was later restored by the Communist Government of the U.S.S.R. in 1957 and, most recently, by the Finnish and Russian consulates in 2013.

Having served Imperial Stout at the Russian Embassy on Russia Day, I was invited to the Service of Commemoration in Lewes and, in turn, dragged the embassy staff to our nearby theatre where I was directing Dostoyevsky's *Crime & Punishment*. We finished the day in the sample room at the brewery where they drank several bottles of Imperial Stout before returning to London, apparently none the worse for wear.

